

THE FARMER'S ADVOCATE

PERSEVERE AND SUCCEED

AND HOME MAGAZINE

VOL. XIX.

LONDON, ONT., MAY, 1884.

Whole No. 221.

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

FOUNDED 1866

THE FARMER'S ADVOCATE AND HOME MAGAZINE,

WILLIAM WELD, Editor and Proprietor.

THE FARMER'S ADVOCATE is published on or about the 1st of each month, is handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for dairymen, for farmers, gardeners or stockmen, of any publication in Canada.

Voluntary correspondence containing useful and seasonable information solicited, and if need, will be liberally paid for. No notice taken of anonymous correspondence. We do not return rejected communications.

TERMS OF SUBSCRIPTION:

1. \$1.00 per year, in advance, postpaid; \$1.25 in arrears. Single copies, 10 cents each, postage prepaid.
2. Subscriptions can commence with any month.
3. Remittances at the risk of the subscriber unless made by registered letter or money order.
4. Subscribers who desire to change their P. O. address will send both old and new address.
5. THE FARMER'S ADVOCATE is continued until otherwise ordered. No paper will be discontinued until all arrearages are paid.

ADVERTISING RATES:

Will be furnished on application, and manufacturers, seedsmen, stock breeders and others will find this journal an unrivalled advertising medium.

THE FARMER'S ADVOCATE has the largest circulation among the best people in Canada. Its advertisements are reliable and are read. Send for copy of our Advertising Rates.

Any intending subscriber should send for a sample copy.

Address—

THE FARMER'S ADVOCATE,
360 Richmond Street,
LONDON, ONT., CANADA.

B. F. Stevens, 4 Trafalgar Square, London, W.C., Eng., is our European Agent, and is authorized to receive subscriptions and advertisements for this magazine.

Subscribers.

Please examine the date on your address label, which shows the time your subscription is paid up to, and if you have not paid in advance, please forward the amount of your indebtedness. Our rate, as you are aware, is \$1.25 when in arrears. We do not send receipts, as the change of date on the label answers.

Our Monthly Prize Essay.

Our prize of \$5.00 for the best essay on *The Causes of the Recent Failure of the Clover Seed Crop*, in different parts of Canada, and the best suggestions for the remedy, has been awarded to Mr. James Shannon, of Wolverton, Ont. The essay appears in this issue.

A prize of \$5.00 will be given for the best essay on *How Can Farmers Make the Best and Cheapest Cheese for Their Own Use.* The essay to be from the practical experience of the farmers or female members of their households, and must be sent into this office before the 15th May.

Notice.

Pressure of business necessitates our being absent from the office a great deal. Therefore much of the conducting of the ADVOCATE has to be left in the hands of efficient assistants. Those of our subscribers having matters to which they desire our personal attention to be drawn, should mark their communications private, and, if intended for publication, a cognomen may be used, but the proper name must at the same time be given. We frequently receive letters from parties who are not subscribers to this journal. No notice will be taken of such communications, unless we deem them of sufficient interest to our readers to warrant us publishing them.

Sheaves from our Gleaner.

Keep accounts.
Bad grain from bad seeds.
Plenty grass—Healthy hogs.
Return your borrowed tools.
Now for your compost heap.
Insects—Examine your fields.
Vermin—Examine your stock.
Profits—Buy good implements.
Parasites—Examine your trees.
Tramps—Don't give them work.
Law suits—Trusting to memory.
Good fences—Peaceful neighbors.
The farmer is judged by his farm.
Farm ornaments—Fix up your fences.
Good seeds—A corner-stone of farming.
Petty theft—Selling wood, piling it loosely.
A sure thing—Plant no seeds except the best.
Risks—Prevented by buying farm property.
Ventilate your dairy when the air is coolest.
Mulch your young trees after setting them out.
Don't remove the mulch from your plants all at once.

Chicago makes 150,000 lbs. of butterine every day.

Good boys—On the 24th give them a holiday and a penny.

Cions may be cut in spring just when you are grafting.

Health guide—England has 263 public analysts of food.

If you want early tomatoes raise them on light and poor soils.

Healthy stock—Don't change from dry to green feed all at once.

Shallow tillage often repeated is a sure exterminator of quack grass.

An eye for profit—Those who attend their working horses well in spring.

Ashes and poultry manure are the most valuable fertilizers for onions.

In Kansas, last year, 52,721 acres of sorghum were planted for forage alone.

A clean occupation—Manage your farm with your head, give your hands a rest.

See that your son doesn't need a plow before you promise your daughter a piano.

Turn out your hens to the currant bushes; they will destroy the currant worms.

Killing calves—Feeding them cold food and leaving long intervals between meals.

A mulch of coal ashes applied to the bushes will check the ravages of the currant worm.

Laying hens require a sunny situation, and should be fed occasionally with chopped vegetables.

Feeding ration—Timothy and clover mixed is a better ration for working horses than timothy or clover exclusively.

The average produce of a well kept garden is worth \$500 per acre. If you want to make money aim at this standard on your farm.

If you are ill, go to your doctor; if a quarrel is impending, go to your lawyer; if anything about the farm is amiss, write to your agricultural editor. It will cost you nothing, and thousands of other subscribers will get the benefit of the information.

The Iowa Agricultural College has been experimenting with regard to the relative value of different foods as milk producers, and have arrived at the following conclusion; corn, per 100 pounds, fifty cents; oats, sixty cents; barley, fifty-five cents; wheat, sixty-five cents; wheat bran, seventy cents; oil meal, \$1.45; clover hay, eighty cents; timothy, fifty cents; potatoes, ten cents. Let it be remarked that those results correspond to the chemical analyses of those foods, so what is the use of experimenting.

Editorial.

Cultivation of Roots.

When roots are grown as part of a rotation of crops, it is usually supposed that it makes no difference what roots are used. This is an error, for even turnips and mangels possess quite distinct characteristics, the only quality they have in common being that both are useful as a means of liberating the soil from the tyranny of noxious weeds. But keeping the land clean is only a small factor in the benefits of a rotation. It is generally supposed that a shallow crop should not follow a deep-rooted one, or *vice versa*, and that one exhaustive crop should not follow another in consecutive order. To say that a crop is exhaustive is as indefinite as to say that one food contains more nutriment than another. Clover, for example, takes large quantities of nitrogen out of the soil, but leaves it richer in nitrogen available for wheat. An excellent crop of wheat will be produced after the land is impoverished by beans; and, under many conditions, a soil exhausted for turnips will produce an abundant growth of mangels. A co-called exhaustive crop should not be regarded with dread; indeed, the more exhaustive the crop the greater will be the gain, for the profit in any case represents the difference between the price of the unmanufactured material in the soil and that of the finished article in the crop. However, there is some meaning in saying that mangels are exhaustive, for they readily take up all the most essential constituents of plant food; but this does not necessarily imply that they require a liberal general manuring. Being deep-rooted, they get their mineral constituents from the sub-soil, so that they are most benefited by a nitrogenous fertilizer; while turnips, being shallow-rooted, require phosphates. Turnips contain much potash, but this does not imply that they require this kind of manure, for if there is any in the soil they take it up very readily; but they feed poorly on phosphates. Farm-yard manure is good for all roots, but farmers sustain great losses in applying so much, instead of using half the quantity, supplementing it with special fertilizers. Besides, it is a usual custom to apply the manure of the whole rotation to the root field. This practice is exceedingly objectionable: for, although a large crop of roots may be produced, other crops reap less advantage. Large roots contain a much less percentage of nourishment than smaller ones, having much more water and woody fibre. Small roots may contain ten per cent. less water than large ones, are more digestible, require less labor and storage, and have better feeding properties. Instead of putting all the dung on the roots, it is better to apply some of it to other crops, or use it as a top dressing for meadows. Mangels require more heat for their development than turnips, the latter flourishing best in a cool, moist atmosphere. These crops should be alternated with carrots, beets and parsnips. Both carrots and mangels make excellent food for horses, and parsnips are best for dairy cows. The latter may be left in the ground all winter and fed in the spring, thereby preparing the cows to go to pasture earlier. All sub-soil feeding roots may be manured like mangels.

The Manure Heap.

This is the chief season of losses amongst the farmers. Domestic animals perish, and the golden juices of the manure heap run to waste by the drenching rains. The quality of the food consumed by the stock is a measure of the value of the heap. When it is considered that nitrogen is the most valuable part of the manure, that three-fourths of the nitrogen of the food is contained in the urine, and over 95 per cent. in the solid and liquid excrements, it will be seen how little is retained in the animal economy for the production of beef, milk, or growth. A still larger percentage of the other constituents of the food is voided. Hence it will be observed that if the animal does not increase in weight or produce milk, all the nutriment of the food will be found in the excretion—bearing in mind that the carbonaceous portion of the food which produces heat and mechanical force, is of no use as a fertilizer. The nitrogen of the urine is of direct use as plant food, and the constituents of the solid excrement soon become available for the plant in the laboratory of the soil. Farm stock may therefore be regarded as machines used for the manufacture of concentrated food for man and plants; and this machinery need never be kept idle for want of work. Hence the richer the food, the greater the profits, whether they take the form of beef, milk, or manure. If the excrements were as carefully husbanded as the other products, there would be more profits in feeding for manure than for beef or milk. It should be distinctly borne in mind that there are at least two classes of fertilizers—one which supplies direct nourishment to the plant, and another which may contain little or none of the essential elements of plant food, being indirectly useful by virtue of their chemical or physical action, such as salt and plaster. Salt was believed by some to be necessary for plant development, but it is now known that plants will flourish without it, and that the minute portions of salt found in plants already exist in sufficient abundance in most all soils. Roots, however, and especially mangels, contain considerable quantities of salt. Undue growth of straw is checked by means of salt, but where is the economy in producing a rank crop by means of valuable fertilizers and then checking it by salt? Plaster contains small quantities of direct fertilizing material, such as lime and sulphuric acid, but the small quantities required are scarcely ever lacking in the soil, the main action of the plaster being to gather and retain the ammonia. When lime is required, its application in the form of plaster is expensive. On the other hand, such applications as farm yard manure, ashes, phosphates, and the different compounds of nitrogen and potash, supply direct food to the crop, leaving the soil in a more or less constant state of fertility. If farmers could be induced to spend a portion of their vacant winter months in hauling swamp muck for the purpose of absorbing the life blood of the manure, either using it as litter or for intermixture on the heap, the pile would at the same time become directly enriched in nitrogenous material, while the more expensive application of plaster, which is often used for the same purpose on account of its absorbent properties, but slightly enhances the value of

the manure. If they could be induced to utilize the carcasses of defunct animals in the way we have often pointed out, instead of feeding them to hungry vultures, and creating a pestilence in the atmosphere, one important step in the practice of economy would be the consequence.

Our Experimental Farm.

We acknowledge the receipt of the ninth annual Report of the Ontario Agricultural College and Experimental Farm, which we received about the middle of April. It contains a good deal of interesting and valuable information, but the most useful gleanings are now too unseasonable for our readers. The Report should be out not later than the 1st of February.

The departments of agriculture and live stock still continue to be the most popular in the curriculum. With regard to what is taught in practical agriculture, the Report is defective, but the live stock chapter is replete with facts. A good work is being accomplished in presenting to the students and the farmers a knowledge of the conduct of the different breeds of cattle and sheep, with their crosses and grades, and many valuable points may be gathered from the experiments in mutton and wool, the pith of which we published in a previous issue. Special prominence is given to experimental feeding for the purpose of ascertaining which products of the farm yield the quickest and most profitable returns. This investigation deserves special attention. No branch of agricultural industry has ever been reduced to a system so thoroughly as this. We have endeavored to compare the fattening standards in the Report with those adopted in England, Germany and the United States, but data are wanting. Canada omitted, the world is a unit in the system of conducting experiments in cattle feeding, but no satisfactory cause has ever been assigned why the Ontario Government should think fit to found a new school in this important branch of husbandry. The practical feeder has served a good purpose, and any standard conflicting with his, based upon chemical analyses of the food, we would condemn as unsound. The object sought by the scientific method of investigation is not only to feed well known foods more economically, but also to enable feeders to compound an infinite variety of rations including foods unknown to them, thereby dispensing with the necessity of experimenting, except perhaps so far as it pertains to different breeds and climatic conditions. The Report (page 41) states that "our winters and summers are so characteristic as to demand a complete set of animal and vegetable experiments." Having thus condemned the co-operative system, the rations fed to milch cows are compared with the German standards, and the harmony is complete. How is it that the co-operative standards work so admirably with milch cows and fail so disastrously in their application to steers fed for the block? The field experiments with artificial fertilizers are also condemned in still more vigorous language. Why then was the co-operative system introduced? Why was a new school not also founded here as well as in cattle feeding? We should have some faith in the new school if, in the whole decade of its existence, it had re-

vealed a single truth upon which a new feeding standard could be based.

Turning to the Report of Mr. F. G. Grenside, the Professor of Veterinary Science, we find a clear and concise statement of the sanitary condition of the stock. He reports several deaths amongst the sheep by "Tape-worm," and amongst the cattle by "Tuberculosis," also cases of "Foul in the Foot" are reported, although no deaths have resulted through the latter channel. He states that Tuberculosis "is unfortunately only too prevalent amongst the better bred cattle of this country," and having described four victims which were slaughtered on the farm, and *post mortem* examinations held, he mentions that one—an Ayrshire cow—had "well marked symptoms of partial paralysis, accompanied by brain disorder." We mention this merely to show how difficult Tuberculosis is to diagnose. The germs of the disease lay latent in one of the subjects for a considerable length of time, and she transmitted them to her progeny. She was slaughtered in prime condition, having gained in weight at the rate of 2½ lbs. per day, and although tuberculous deposits were extensively spread over various parts of her interior, the function of no vital organ was interfered with. Amongst the causes of the disease he states that it may be transmitted by "co-habitation, partaking of milk from tuberculous subjects, and the using of their flesh as food," it being also held by the most scientific observers "that the milk and flesh of infected animals are likely to prove a medium for the transmission of the disease to human beings; for the tubercle of man and cattle are held to be identical."

Two objects are usually assigned in urging the necessity for importing live stock to the Farm: (1.) As a medium of practical education for the students. (2.) As a means of supplying the farmers of the Province with cheap and reliable thoroughbred stock; and perhaps another may be added (3)—for the purpose of making money.

It is reported that the Government have now agents in the Old Country buying up another batch of cattle and sheep for importation to the Farm. In the Report we can find no assurance that, before the arrival of this flock and herd, the cattle now on the Farm—which may have become tuberculous by "co-habitation" or "inherited tendency"—will be removed; or that the old stables which are a fruitful source of Foul in the Foot, will be replaced by the contemplated new ones; or that the farmers sons who will be there next autumn will enjoy immunity from contaminated milk.

It is true that the presence of good thoroughbred stock has an excellent educating influence amongst the students, and, from an educational standpoint, the more disease the better; for diseases require to be taught practically as well as the handling and judging of stock; but the Report makes no attempt to prove that the educating factor so far over-rides the danger of spreading diseased "cheap" stock amongst our farmers as to warrant an importation at the present time.

The extent to which Tuberculosis has spread amongst the cattle in Britain is too well known to require comment.

In Southern Russia the law enforcing deep burial of the carcasses of infected animals has been abolished, and stringent measures enforcing cremation substituted for the purpose of eradicating the cattle plague.

Influence of Forests.

The effects of forests upon climate have not been duly appreciated. They act as a barrier against the furious winds, regulate and distribute rainfall, and moisture by means of exhalations from the leaves, protecting crops and promoting their growth. Their absence therefore deranges all the industries of a country, causing floods in some regions and drouths in others; navigation of streams is thus impeded, many manufacturing establishments remain idle for want of water power, and, above all, crops suffer from and property is destroyed by climatic extremes or the ravages of insects injurious to vegetation. Forest fires too frequently aid the devastating power of the axe. The planting of forests has proved successful from a financial standpoint, and this will doubtless give it a greater impetus than any other cause. This continent has suffered the penalty of its forest denudition folly, and the sooner it restores the heritage which nature so richly lavished, the better for the health and prosperity of its people.

Are Discussions to be Stifled?

On the 28th of February we were present at a meeting of the Experimental Union, a body composed of students and ex-students of the Agricultural College. The Presidents of Agricultural Societies are appointed honorary members, and the officials of the College and Model Farm are also members.

The meeting was held at the Agricultural College in Guelph. We consider this an important meeting, viewing it either from an agricultural or a sanitary standpoint. We consider it of importance that every legislator, farmer and granger should be furnished with the true, exact and unbiassed report of the discussions that took place after Dr. Grenside, the Farm Veterinary, read his paper on "A Consideration of the More Prevalent Diseases of the Stock of the Country, and their Prevention." Also a true report of what took place after the paper read on "The Grange as an Organization for Farmers," and discussions about the same. We have not seen what we consider a correct or fair report on these points.

There is an erroneous feeling among some of the recipients of favors or patrons, that truth and facts regarding the Model Farm can be stifled. Apparently with that aim a resolution was brought in at this meeting in reference to the FARMER'S ADVOCATE.

A strong feeling also exists among the officials of the College, and members of the Experimental Union, adverse to the criticisms made in the ADVOCATE exposing some of the defects of the institution. Some go to the extreme, and pronounce them erroneous and injurious. We consider we have only partially exposed the failures of the institution, and have done so for the purpose of benefiting the farmers. The institution might be made of great benefit to farmers, and with that object in view we attended this meeting, and

have offered to try and use our influence to utilize and popularize the Model Farm for the farmers' interest. We have asked for a fair and truthful report of the most important parts of the meeting, but as yet have not received them. For the present, at least, we consider silence our duty, as we have furnished what we believe to be important information to the proper Government authorities, and await results. We trust that there were among the audience gentlemen who may furnish correct information to those interested in the well-being of the College, and that some paper may publish the unbiassed truth in regard to it.

The public should be made acquainted with the fact that the institution is divided into three branches: 1st, the Model Farm proper; 2nd, the Experimental Department; 3rd, the Agricultural College. We have not intended to censure or criticize the College; we have said but little in regard to the Experimental Station; our remarks have been aimed at and intended for the Model Farm. It is the Model Farm that requires the closest investigation. We do not believe there is one honorable person even among the employes but must admit this: a very searching inquiry should be made, and very radical changes should be enforced immediately. Every farmer should be furnished with correct information as to what is being done, what has been done, and what is to be done in the future.

Model Work and Pay.

In the recently published report of the Ontario Agricultural College and Experimental Farm, there is an item of \$4,000.42 paid for students' wages. This is an equivalent of 20 first-class farm laborers, counting wages at \$200 a year. Add to this the 10 regular farm and garden hands, who, let us suppose, are first-class men getting \$200 a year—\$3,000. Thereto should also be added the wages of the foremen of the farm, garden and mechanical departments, as required by the estimates for 1884, \$1,000 each—\$3,000, and also the wages of superintendence, say \$1,000. This makes a gross total of \$10,000 paid out for the ordinary work of these departments. This sum is equivalent to 50 men at \$200 a year, or about 10 hands for every 100 acres of the Farm. If men can be hired for \$180 a year, the number would be 55 in place of 50. This does not include extra help in summer, or labor expended on experiments or in the arboretum. However, let us credit a few hundred (or a few thousand?) dollars for instruction by the foremen, and for any extra fancy work not usually performed by the ordinary farmer. It is also necessary to bear in mind that the facilities enjoyed by the Farm in the way of water privileges, and agricultural implements and machinery, are far superior to those of the average farmer.

The profits on the \$25,000 voted by Government for a fresh importation of live stock will be inadequate to maintain this equipage, and keep up the reputation of the Farm. How would it do for the farmers to invite the management to make the best use of the means they have before they get any more?

The most unfavorable time to transplant a tree is just as the buds are beginning to burst,

Special Contributors.

A Chatty Letter from the States.

[FROM OUR CHICAGO CORRESPONDENT.]

The feeling in the fine stock market is not one of pronounced weakness, yet there surely is not very much strength to be noted. There seems to be fully as much inquiry for fine breeding stock as ever, and in fact the volume of transactions is larger than ever before, because the supply and demand are both larger. The fact of the matter seems to be that the fever or boom in fine stock noticeable eighteen months ago has subsided, and business has simply settled to a solid, legitimate basis.

There are certain kinds of stock in great favor, but there is almost a total absence of that reckless desire to buy certain kinds almost regardless of price.

During the past two or three years there has been an enormous sale of young grade bulls, and as prices have been very remunerative to breeders, the production of that class of stock has lately been large. It cannot be said that the breeding of grade bulls has been overdone, because there still is a very strong demand for them, especially from the far west; but the sources of supply have increased very greatly, competition has entered into the business, and those who wish to buy young bulls have better opportunity for choosing both as to price and quality; they do not have to snap up the first lot that offers, to make sure of getting any at the time they are wanted.

Spring sales of fine stock have not been entirely satisfactory to owners, but to say that they have not been entirely satisfactory does not mean that they have not for all that been fairly remunerative to breeders. In some cases it has been said that imported cattle have sold for no more than they cost in England, thus leaving a considerable loss to be pocketed by the importer, but it must be said that such cases have been rare. To the surprise of many, Polled Angus and Galloways, which were truly "all the rage" a few months ago, have seemed to sell least satisfactorily to owners than any other kinds, and one or two public sales have been declared off on account of the unsatisfactory prices. Those cattle are wanted and are admired as much as ever, for they have as a rule done, upon trial, all that was claimed for them, but the excitement for the present is over, and fine stock men are realizing that extravagant prices can be paid even for the favorite Angus-shire doddies.

It is well to be somewhat conservative in all things, and if some of the speculators who have invested in black polled cattle had not thought there could be no end to the boom that was started a few years ago, they would have been better prepared to accept reasonable prices at late spring sales. Extremes in everything should be avoided. Some people think that when prices are advancing, there can be no limit to it, and the same way when values tend downward.

The first spring series of Kentucky Short-horn sales at Dexter Park, lasting three days, was moderately successful, and fair prices were obtained, though the bidding was not very sharp, as the attendance of buyers was not large. The prices realized were remunerative to the breeders, but not highly so, and it is to

be hoped therefore that the purchasers will derive the proper benefit. A thing poorly sold is well bought, so the old saying goes, and if the owners did not do as well as they expected, perhaps the buyers did better than they anticipated.

While some few finely bred and particularly attractive animals made high prices, the general average was kept rather low, or at least within very reasonable bounds, judged from the standpoint of a purchaser.

The grand totals and general averages were as follows: 130 females, at an extreme range of \$50 to \$905, making an average of \$195. The bulls, 31 head, sold at \$65 to \$1,205, averaging \$234 all around.

The color craze has not yet subsided, and there are many people who will give a considerable premium for a red animal over one whose coat is white. It can be easily understood why there is some prejudice against white beasts, but there are no sound reasons for the preference that is shown for Rosebud over Snowball. It is a whim, and there are not many people who can well afford to humor their whims. There is reason in objecting to black sheep in the flock, but no such good reason can be given in the case of white cattle in the herd. A young breeder who has not the means to indulge in whims might do well to attend public sales and bid on well bred white cows. He could then get a solid red bull, and the result would be progeny of the most fashionable roan color.

Dairymen of the country are greatly given to disposing of their calves for veal; many of them are sold for that purpose before they are fit for human food. Such practice is wasteful in the extreme. A calf is sold for \$6 say, when if kept a few months and allowed to eat grass, which costs nothing, would be worth four or five times that much. In large cities a vast amount of veal almost wholly unfit for food is consumed every day. At the great markets, too, there is shameful waste in the slaughter of pregnant animals. A cow well along in calf is killed, and must of necessity be more or less unfit for food, while the calf is a total loss except the "deacon" skin, which sells for a mere pittance. The same is true of swine. The custom of slaughtering sows far advanced in pregnancy is largely practiced. The taking of one life in such cases means the destruction perhaps of six or eight or ten, according to the size of the litter. "Willful waste makes woeful want." This is willful waste.

Competition is truly the life of trade, but carried too far it becomes the death of trade. The tendency of the times in the commercial world is not to see how much profit can be honorably made, but to see how much work or merchandise can be given for the smallest possible price. So close are the margins in many branches of trade, that we frequently hear men who are doing a large business say that they are compelled to do it on little or no profit. Men handle hundreds of thousands of dollars without leaving any but the most scanty margin for themselves. This is a result of sharp competition. Labor saving machinery, adulteration and many other important factors enter into the causes. As business of any kind becomes more systemized, the margins of profit are proportionately reduced, because system en-

ables men to see exactly what they are doing, and a desire to outdo a rival tempts them to run too close to the brink of bankruptcy. This general tendency of the commercial world will be observed more and more in live stock circles. It is already developing very rapidly on the plains; that is, there are fewer "wild-cat" trades, fewer bonanzas struck than formerly, because economical and business principles are being brought into play. Margins in by-gone days were so large that it was almost impossible to make any mistake in investing. If cattle were bought at what seemed a high price, they would grow dear to the owner in a few months. But as time passes, in the natural order of things, prices must be more systematically fixed, and "quick returns and small profits" must become the watchword. Early maturity tends strongly to hasten this inevitable result.

Hogs are selling at \$1.50 to \$1.75 per hundred lower than one year ago, and yet the receipts are no larger now than then. There is less demand for hogs and hog product than last year. The trade is more speculative. A firm of Chicago hog packers has gone to Berlin to try the experiment of establishing a packing house on the American plan; and a large dressed beef man of Chicago is preparing to begin the shipment of dressed meat to Germany. The business of dressing muttons and forwarding them to the east in refrigerators is on the increase very rapidly.

Store cattle were never so high as now. Eastern dairy calves are selling here at \$12 to \$20 per head, and thrifty young cattle, yearlings and two's, are selling at \$4 to \$5.75 per hundred.

The National Wool Growers' meeting and the Industrial Congress here, May 19-21, will doubtless be largely attended.

Our English Letter.

[FROM OUR OWN CORRESPONDENT.]

Liverpool, April 2nd, 1884.

In this country a battle is now raging very fiercely between the farming and grazing interests on the one hand, and the great meat-consuming centres on the other; and the *casus belli* is certain amendments adopted by the House of Lords, on a bill promoted by the Government, placing further restrictions on the importation of live cattle. It was framed ostensibly with the view of preventing the infection of British herds through the landing of diseased foreign cattle. As submitted by the Government, the bill would have met the demands of the farmers to a large extent, so far as the protection from disease is concerned; but it did not go nearly far enough for Mr. Chaplin and his friends, whose desire for "protection" pure and simple for the farming industry of the country, is very thinly disguised. They want protection not only from disease, but from competition in cattle and corn, and in fact all they produce. The result is that when the bill got to the House of Lords, where the Conservatives can always, if they like, make a successful fight, amendments of a most stringent character were introduced into the bill, the effect of which would be absolutely to remove the discretionary powers of the Privy Council authorities, and make it compulsory, upon proof of a case of disease being imported from

they are doing, attempts them to bankruptcy. This special world will be stock circles, rapidly on the "wild-cat" than formerly, principles are ins in by-gone most impossible ng. If cattle a high price, owner in a few in the natural more systematic and small pro- word. Early in this inevit- 1.75 per hun- and yet the re- hen. There is duct than last tive. A firm e to Berlin to ning a packing a large dressed g to begin the Germany. The nd forwarding s is on the in- high as now. here at \$12 to g cattle, year- 4 to \$5.75 per meeting and the ay 19-21, will ter. (CONT.) il 2nd, 1884. ow raging very l grazing inter- great meat con- and the *casus* adopted by the o moted by the trictions on the [t was framed venting the in- the landing of o mitted by the ve met the de- extent, so far concerned; but for Mr. Chaplin "protection" industry of the d. They want , but from com- in fact all they hen the bill got the Conserva- take a successful stringent char- bill, the effect to remove the Privy Council pulsory, upon imported from

any country, to at once stop the landing of live cattle from such country, so that all cattle sent to us would have to be slaughtered at home, and the dead meat only sent to us. How this would embarrass, and in many directions destroy the trade, is obvious. If we depended upon our own internal supply, butcher's meat would soon be the luxury of the very rich and would scarcely be obtainable at 50 cents a pound. No wonder, therefore, that a considerable agitation has sprung up in opposition to these amendments, and a hot fight is now raging. The landlord interests, backed up to a certain extent by the farming interests, are taking the one side, and the consumers in the large towns on the other. It is impossible to say what the issue will be; but certainly the interests of the landlords are being well advocated. Certainly many of the arguments adduced are very cleverly devised; but they will scarcely bear analysis, in view of the fact that cheap food is of paramount interest to the great mass of the population here. At the same time, it is undoubtedly the fact that the agricultural interest here is heavily and very unfairly handicapped. On the one hand they are exposed to the unrestricted competition of foreign productions rivalling their own; and on the other, the great coal, iron and textile industries of the country, which give them a market for their more perishable productions, are heavily taxed, and practically speaking, excluded from the markets of those countries which gain the most advantage from our own free markets. Again, the British farmer, during the last ten years, has seen the prime of the rising generation of laborers leave this country and become his rivals in the production of food across the seas, whilst he is left with old men and boys, the lame and infirm, and consequently his labor is either inferior in quality or much higher in price, and his poor rate is largely increased in order to support the old men and women whose sons have left them and who have to come on the parish. Thus, whilst his land is more heavily taxed, his markets are decreasing in number and in value. Therefore the British farmer is entitled to some degree of sympathy. As recently stated at a meeting of the Crewe Agricultural Society, the wheat produced in that district last season was probably as good as any which had ever been grown there, and the harvest was fairly satisfactory; but they had to contend with a better quality of wheat from Manitoba and elsewhere, which could be sold at a lower price. The prospects of the English farmer, not alone through climate, but through foreign competition even when he has done his best, are therefore annually darkening. Not only in the matter of beef does this cattle diseases bill affect the population here. There is the question of the supply of milk. Notwithstanding the largely increased trade in condensed milk from Switzerland, Ireland, and, I am glad to see, from your Maritime Provinces, the demand for fresh milk goes on extending, and necessitates the importation of considerable numbers of dairy cows. These formerly, and more especially for the London market, came principally from Holland, but on account of disease, that trade has been suspended. There certainly appears to be no other country from which milch cows can be imported to such advantage as from Canada. A gentleman went

out last autumn to your Province, and became so satisfied with the dairy cows there suitable for the English market, that in the next few weeks he is again proceeding there to bring over a pioneer shipment. A few cows have been shipped by the cattle salesmen, but without any care apparently having been taken in their selection, and they have tended to beget distrust rather than otherwise. I trust in the interest of the milk consumers here, that the new venture may prove a success. I understand that the Canadian Government is making extraordinary efforts to attract emigration from the continent, and I should strongly advise any of your farmers who require reliable labor to look out for some of the Swedes and Germans who will find their way to your Province this coming season. The agricultural outlook in this country, so far as weather goes, is very promising. We have had a mild winter and dry March, and now we are having "April showers." So far the season is typical.

PRIZE ESSAY.

The Causes of the Recent Failure of the Clover Seed Crop.

BY JAMES SHANNON, WOLVERTON, ONT.

Somebody has said that "Clover is one of the mainstays of Canadian agriculture," and, after trials of other plants for fertilizing purposes in comparison with it, we believe this saying contains much truth. Its value in relation to grain farming as the best known recuperating agent that can be used in the regular rotation, is too well known to need further demonstration. As a forage plant it also towers above its competitors. Hence the great loss which now seems to be threatening the American farmer in the destruction of this inestimable plant. Hitherto it has been one of the most healthy plants propagated in this climate, but like other good things, it is meeting with enemies. The clover worm, which feeds upon the root only, seems to be as yet confined to certain districts, and is fortunately not very widely spread. But the most to be dreaded pest is the tiny midge which has lately spread to an alarming extent.

In the present article I shall confine myself to a short description of the clover seed midge, as contained in the FARMER'S ADVOCATE for July, 1882, and other reliable sources, with such treatment as is thought will destroy this pest, and still preserve to the agriculturist the use of clover. It is now thirteen years since the writer first heard of this insect from an American gentleman whose family connections then resided in some of the western counties of New York State, where they were said to be working in the clover heads. A year or two later we saw some specimens from the same place. These were, to the naked eye, identical with the wheat midge, then too well known, but, according to entomologists, are not the same insect, but closely related to it. It passes the winter in the pupa state, as is common with the insect tribes. As soon as the weather is warm enough in the spring, the fly escapes, when the female becomes fertilized and is ready to deposit her eggs, which she does soon after the clover comes into bloom.

In about ten days the eggs are hatched, and the larva works its way down the flower tubes to the seed, upon which it feeds. When mature they leave the clover heads, fall to the ground, pass the pupa stage, and emerge as perfect fly, again to repeat the process of propagation. There are said to be two and possibly three broods during the season. Thus prolific with unlimited breeding grounds, it is spreading rapidly, and already large areas in the Northern States and Ontario are infested with it. I do not, however, attribute the recent failures in the clover seed crops in Ontario solely to the ravages of the midge. The seasons of late have been very unfavorable, resulting in blight in many cases. Of course we cannot guard ourselves against the extremes of our climate—heat and frost, drought and moisture—but we can wage a successful war against this little foe by united effort. The only remedy found to be effectual in destroying the wheat midge twenty years ago, was to deprive it of its breeding grounds, and allow it to starve out in time. Just so we think it must be done with this half-sister, the clover midge, with this difference, however, in our favor: In the case of the wheat midge we were obliged to cease for a time the production of wheat. In the present case we may continue the use of clover, and reap at least a two-third value as compared with the past. But we must not allow it to mature sufficiently to be worked upon by the fly. This plan will of course be subject to this one condition, viz., the importation of seed from disinfected districts. If farmers could be induced to adopt this plan for a few years, and avoid all attempts at raising seed, and mow or pasture off all second growths especially, so as to leave no harbor for them, we think it would not be long until we could again take up the ordinary routine. Great care should be taken in the selection of seed, as the larva may be carried in the kernel.

Canada Ahead.

Professor Arnold being in Ottawa during the session of the Committee on Immigration and Colonization, was called upon to give his opinion on Canadian salt in its adaptation to dairy purposes. He stated that much of the talk about the salt of different countries for this purpose were for the most ideas worked by dealers and agents, but he had carefully conducted a series of experiments with Liverpool salt and Goderich salt in comparison, and the Goderich salt produced the best results, and also in subsequent experiments came out ahead of Linn salt. In short, the Goderich and some other Canadian brines were the purest in the world, and the Canadian article was now coming into serious competition with the United States salt for dairy purposes in the American home market.

THE DEMOCRAT WHEAT.—Mr. James Thompson, of Thamesford, Ont., informs us that he considers this a very valuable wheat, and considers that he has made \$300 to \$400 more by sowing the Democrat than he could have done by sowing any other variety.

If you have good milch cows, by no means part with their heifer calves. It is cheaper and less risky to raise good milkers than to purchase them.

The Farm.

Hired Help versus Machinery.

One of the most critical points which a farmer has to decide in connection with his field operations, is whether he should engage laborers to perform the work, or purchase implements. No rule will apply to all parts of the country, for in some sections laborers are cheaper and more plentiful than in others, and the facilities for procuring farm machinery and repairs are greater. When laborers are scarce, some farmers have the habit of keeping lounging laborers about them, and expect them to be always on hand when a push takes place. This is a bad practice, for such loafers are dearer in the end, being generally unmerciful to the beasts, careless in handling implements and tools, and wasteful in every respect. Besides, keeping two or three hands to do the work which should be performed by one, is a great tax on the wife, especially in hot weather when her duties are naturally most onerous. It would be much more profitable to engage skilled help; such has been found to be the best practice in all trades, and there is no reason why it should not prove so effectual amongst the farmers. But it has been found difficult to procure reliable hands except when they can be engaged by the year, and this is impracticable amongst many farmers. This defect in our system of farming may be remedied in three ways: (1) Laying out the work so that a greater portion of it may be performed in winter, or engaging in such branches of farming as demand more attention in winter, such as feeding stock under a more improved system of management, curing and hauling manure on the best plan, hauling muck for stables and fields, etc. (2) Building houses for married laborers; and (3) performing more of the field work by machinery. There is a loss sustained in going too extensively into implements, for the more expensive kinds employed in the field can only be used for a few weeks during the year, and spacious buildings are required for their protection from the weather. Expensive machinery can never be employed to advantage except on large farms, and when the purchaser is an expert in judging and using it. This is just as necessary a qualification as the judging of live stock, and in one respect more so, when it is considered that the country is full of irresponsible agents who endeavor to make a few dollars out of the farmers at any sacrifice as to their own reputation or that of the establishment for which they are canvassing. The best practice which we have seen is when a number of neighbors unite in the purchase of the more expensive kinds of machinery, such as threshing machines, self-binders, hay loaders, tedders, etc. In this way those who have clean farms can prevent their fields from becoming infested with growths from noxious seeds. In the United States the custom of erecting dwellings for married laborers is fast gaining ground, frequently giving them a percentage of the crop in lieu of wages. This is a laudable practice and should be more extensively adopted in this country. This is the only way in which honest labor can be permanently secured, and the laborer's wife and family may be constantly at hand whenever there are extra duties to be performed.

Testing Seed Corn.

Numerous tests have lately been made in the United States with regard to the vitality of seeds. The State University of Ohio have made tests of corn kept under different conditions, and taken from different parts of the ear, as illustrated by the following table:

TABLE I.
Selected ears from corn stored in crib, 100 kernels each taken from the tips, middles and butts of 100 ears.

	Tips.	Middles.	Butts.
Sample 1.	.78 per cent	64 per cent	78 per cent
" 2.	.70 "	40 "	70 "
" 3.	.72 "	38 "	30 "
" 4.	.33 "	14 "	44 "
" 5.	.35 "	18 "	47 "
" 6.	.73 "	43 "	71 "

TABLE II.
Selected ears, dried by artificial heat, and stored in small quantities together in dry rooms:

	Tips.	Middles.	Butts.
Sample 1.	100 per cent	93 per cent	93 per cent.
" 2.	.99 "	100 "	100 "
" 3.	.99 "	90 "	90 "
" 4.	.96 "	100 "	96 "
" 5.	1.00 "	100 "	98 "
" 6.	.92 "	94 "	98 "

Similar experiments have been conducted at the New York Agricultural Experiment Station, showing the following results:

	Butt.	Central.	Tip.
Merchantable ears, per 100 plants	111	90	118
Unmerchantable ears, " "	42	20	16
Total ears per 100 plants	153	110	134
Average length of merchantable ears	In. 7.1	In. 6.3	In. 7.3
Average weight " " " "	lbs. 50	lbs. 37.3	lbs. 50.
Average weight of 100 merchantable ears.....	44.6	40.9	42.

- "1. The tip kernels were the most prolific of good corn.
- "2. The butt kernels were more prolific of good corn than the central kernels.
- "3. The tip kernels bore longer ears than the other kernels, the butt kernels the next, and the central kernels the shortest. This fact was apparent to the sight as the corn lay upon the ground after husking.
- "4. The merchantable ears from the butt were distinctly heavier than those from the tip, and those from the tip distinctly heavier than those from the central kernels.
- "5. The butt kernels furnished more unmerchantable corn than did the central kernels, and the central kernels more than did the tip kernels."

These results are not only beneficial to the farmer, but also as establishing a more reliable basis for conducting experiments with artificial manures on the "co-operative system." It is useless to expect profitable results from these experiments unless the seeds have similar powers of vitality. Don't purchase bad seeds and debit the loss to the land or the fertilizer.

At a late meeting of the Maine State Grange, resolutions were passed appointing committees for the encouragement and advancement of various departments of agriculture, including Forestry, Ensilage, Fertilizers, Drainage, &c. Circulars were sent to the subordinate granges, asking their co-operation in conducting experiments and reporting results. Their main object is to ascertain which are the most profitable branches of farming.

Sorghum Manufacture—The Oak Hill Process.

Our Oak Hill process of manufacture has proven most successful. As it is not patented, any one can use it. The juice from the mill, after straining, is bleached with the fumes of burning sulphur—small works may use bi-sulphite of lime instead, which is the same, only a little more expensive. A bright sirup cannot be made with lime alone, unless enough is used to completely neutralize all the acid, and this, as every one knows, will make a dark sirup; but by using an additional acid, of which the sulphurous, or dioxide of sulphur is the best known and cheapest, the extra amount of lime can be used without injury to the glucose contained in the juice, and a light and bright sirup can be made from any variety of sorghum cane juice in good condition.

After the juice is bleached, or the bi-sulphite added (which latter may be at the rate of from one to two pints to one hundred gallons of juice), then as much milk of lime is added in the defecator as would neutralize all the acid in the juice, if none had been added; but with the additional acid it would still be in an acid state, showing on the litmus a purple color. Of course it requires some experience in this, and no one can expect to succeed at first. The litmus is not always reliable; some juice requires to be more neutral. The experienced eye is the best judge. The batch, after the addition of the lime, is heated up to the boiling point—a little slowly at the end, so as to heat it evenly without breaking the blanket. When the first blanket is taken off, it can then be seen whether the right quantity of lime has been used by testing in a bottle. If it settles very clear, like water, it has not quite enough lime; if it has a strong yellow tinge, too much lime was used; if the defecator does not hold any more juice it will have to be corrected with an acid—either superphosphate of lime, sulphate of alumina, or good, strong vinegar, even, if none other is at hand.

If the defecator is arranged with scum-troughs on each side, then the boiling may continue for a while and the scum be swept off as fast as it rises. Good clarified juice should have a light, transparent, straw color.

Settling tanks of same capacity as defecators should be provided in such number as to allow at least one hour's time to settle before evaporating.

In the evaporator the process of clarifying should be continued, if constructed right for that purpose, for at least fifteen minutes, with slow boiling, and sweeping off, until perfectly clean. By the time it marks about 10 B., then all the steam is turned on, and, breaking the batch, it can be left to itself until done, which should be between fifteen to twenty minutes (to 20 B.); then let it into another tank to settle, and finish as convenient, to 35 or 36 B. (saccharometers do not test alike at this point). Sirup should weigh eleven and one half pounds per gallon when cold.

A long trough from the finishing-pan into the sirup-room is the best cooler; this empties into a large, shallow box, from which the sirup can be conducted to the different tanks from which the filling of the barrels take place. We never draw into barrels until it is cooled below 90 Fahr.

The above directions are especially for steam-trains; fire-trains may work it successfully if the size will justify an extra fire for defecating and clarifying the juice. I am afraid that small operators can never use lime with success, for reasons as above stated, and the quicker they boil their juice down, the better. Central factories to take their semi-sirup will be the best for them in the future.

The solution of superphosphate of lime mentioned above has the following formula: To ten pounds of bone-black (refiner's refuse will do) add six and one half pounds sulphuric acid, diluted with five times its weight (or four gallons) of water. It should be mixed in a wooden tank or barrel, by pouring the acid into the water, never the reverse.

Let it stand thirty-six hours, with occasional stirring; then pour off and settle. It should be about 10 B. density. But unless one has a lot of refuse bone-black on hand, it is cheaper to buy it. We get it from the Sterns Fertilizer Company, of New Orleans; price twenty-five cents per gallon, by the barrel. They also make the solution, superphosphate of alumina.

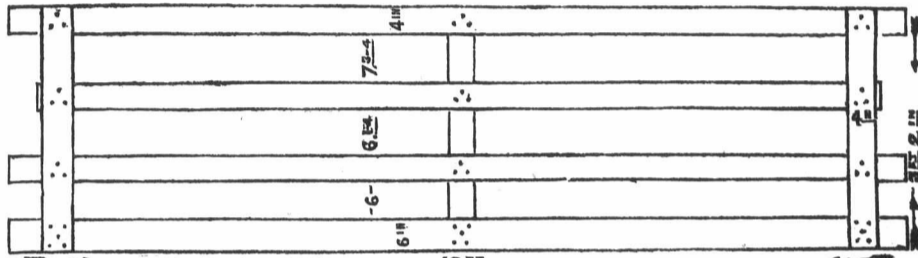
Both have been used by some sugar-boilers in Louisiana the past season, especially on their second sugars. Their action on the juice is to combine with any excess of lime in the juice and coloring matter; but it should be given some time in the settling-tanks to do this, otherwise it will settle the resulting phosphate of lime on the coil in the evaporator. If the coils are of copper, however, they are easily cleaned with muriatic acid and water. I have often worked cane that had grown very rank, the juice from which required a little overliming to clarify well. I think an excess of ammonia in the soil is the reason. It is on just such juice that we have to resort to a strong reaction of some kind. The superphosphate of lime is perfectly safe to use, even if a little should remain in the sirup. I have used as much as one to one and one half pints to the one hundred gallons of juice with good results; also in the cold juice, in place of the sulphur or in connection with it. Lime alone will not make a bright sirup from sorghum, unless we should get a juice nearly free from glucose. With sulphur fume or bisulphite of lime, any color may be obtained, with corresponding brightness; but the nearer it comes to New Orleans in color, the better the price it will bring in the general market.—[C. M. Schwarz, in the Farm and Fireside.

Some agricultural writer figures on muck in this way: "Ten tons of wet muck contain, at 50 cents a ton, \$5 worth of nitrogen. These ten tons wet, weigh only three tons when air-dry. These three tons should take up six or seven tons of liquid manure before saturation. It then stands thus: Three tons of air-dry muck, \$5; six tons of liquid manure (urine) at \$5 a ton, \$30; making a total value of \$35. This would make the value per ton of air-dry muck \$11.67, \$10 of which would in all probability have been wasted, had not the ton of air-dry muck been used as an absorbent.

Methods of Fencing.

The report of the mechanical department of the Experimental Farm contains some valuable hints with regard to fencing. Mr. James McIntosh, the foreman, has been making some interesting and valuable estimates. He gives the following estimate of a board fence—five boards, one 12 inches wide, two 8 inches wide, and two 7 inches, making, when complete, including face pieces and caps at joints:—

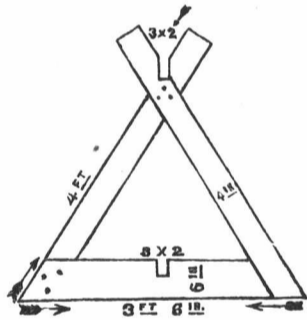
60 ft. lumber per rod, @ \$12 per m...	\$ 72
Posts, 7 feet apart, 12½c. per rod....	28
Nails, per rod.....	3
Cost of erecting, per rod.....	28
	\$1 31



MOVABLE FENCE.

These figures are then compared with a seven-wire fence, as follows: Seven rods No. 8 galvanized wire, weight 8½ lbs., @ 6½c. per lb., 55½c.; 2 posts, @ 12½c., 25c.; wire staples, 4c.; cost of erecting, 28c. per rod; total, \$1.02½ per rod, or 28c. per rod less than the board fence.

Herewith we give a cut of a portable fence used on the Farm, which we had engraved for us on the scale of three-eighths of an inch to



the foot. Mr. McIntosh thinks that this is simpler and cheaper than the mortise hurdle fence. By attention to the cut, any farmer can construct these hurdles.

Among the varieties of sorghum competing for supremacy in northern latitudes may be mentioned the Early Amber, the Early Orange, and the Honduras. The two latter are said to flourish in all parts of the American Union, and why not so in many parts of Ontario? However, the farmers had better stick to the Early Amber until the others become better known, it being earlier, and hence better adapted to northern regions. When planted towards the end of May, it matures about the middle of September. It will do well on land which is not rich enough for corn. When used with other fodders, it is a capital thing for soiling; even when a vigorous crop is desired for making sirup, the smaller shoots may be culled out and fed to the stock.

Sugar from Sorghum Cane.

This invention of A. J. Adamson relates to the manufacture of sirup and sugar from sorghum cane; and the invention consists in the novel process of treating the cane before the juice is expressed.

Attempts heretofore to manufacture a first-class sirup or sugar from sorghum-cane have been more or less unsuccessful, partly, no doubt, owing to the fact that sorghum juice contains a large percentage of impurities, including green vegetable matter, which cannot be easily eliminated in the process of converting the sirup or sugar. The inventor therefore provides for the separation of the pure juice and impurities before the former is expressed from the cane,

and his process consists in first roasting the cane until it throws out a gummy substance which sticks to the stalks. The cane, while warm, is then run through the mill, and the juice thus expressed is filtered through white clay to remove any particles of earth or woody

fibre it may contain. The pure juice thus obtained is then boiled down in the usual manner, which requires, however, only about half the time required when the cane is not roasted.

The sirup thus produced is much purer than that made by the usual method, and will not sour so readily. It is also devoid of the peculiar rank taste of ordinary sorghum sirup. The sirup is converted into sugar in the usual manner.—[Chemical Review.

Top-dressing Potatoes.

Some important experiments have been conducted at the Ohio Agricultural Experiment Station with different fertilizers as top-dressings for potatoes. The fertilizers tested were wood ashes, coal ashes, lime, gypsum, salt, hen-manure, a mixture of ashes and plaster, and a mixture of ashes and lime. These were applied when the tops were about two inches from the ground. A description of the soil is not given, which detracts considerably from the value of the results. The experiment with ashes proved that it would be profitable to apply 75 bushels per acre, at a cost of 25 cents per bushel. The mixture of ashes and plaster produced about the same results. Plaster alone had no effect. The lime also proved ineffectual. With salt, quantities over 5 bushels per acre proved injurious, and rations under this quantity produced a slight profit. Hen manure, finely pulverized, gave about the same results as ashes. Judging from these results we would say that the soil was a loam containing little organic matter. It is quite likely that the ashes were purchased from Canadian farmers at two or three cents a bushel.

HORSE MANURE.—No kind of manure is so liable to injury from fire fanging, as it is called, as this. Where horses are stabled and their excrement thrown out in heaps, it rapidly heats and much of its most valuable properties are lost. After very slight heating it should be drawn and spread on the land.

Elmwood Stock Farm.

THE PROPERTY OF T. D. HODGENS.

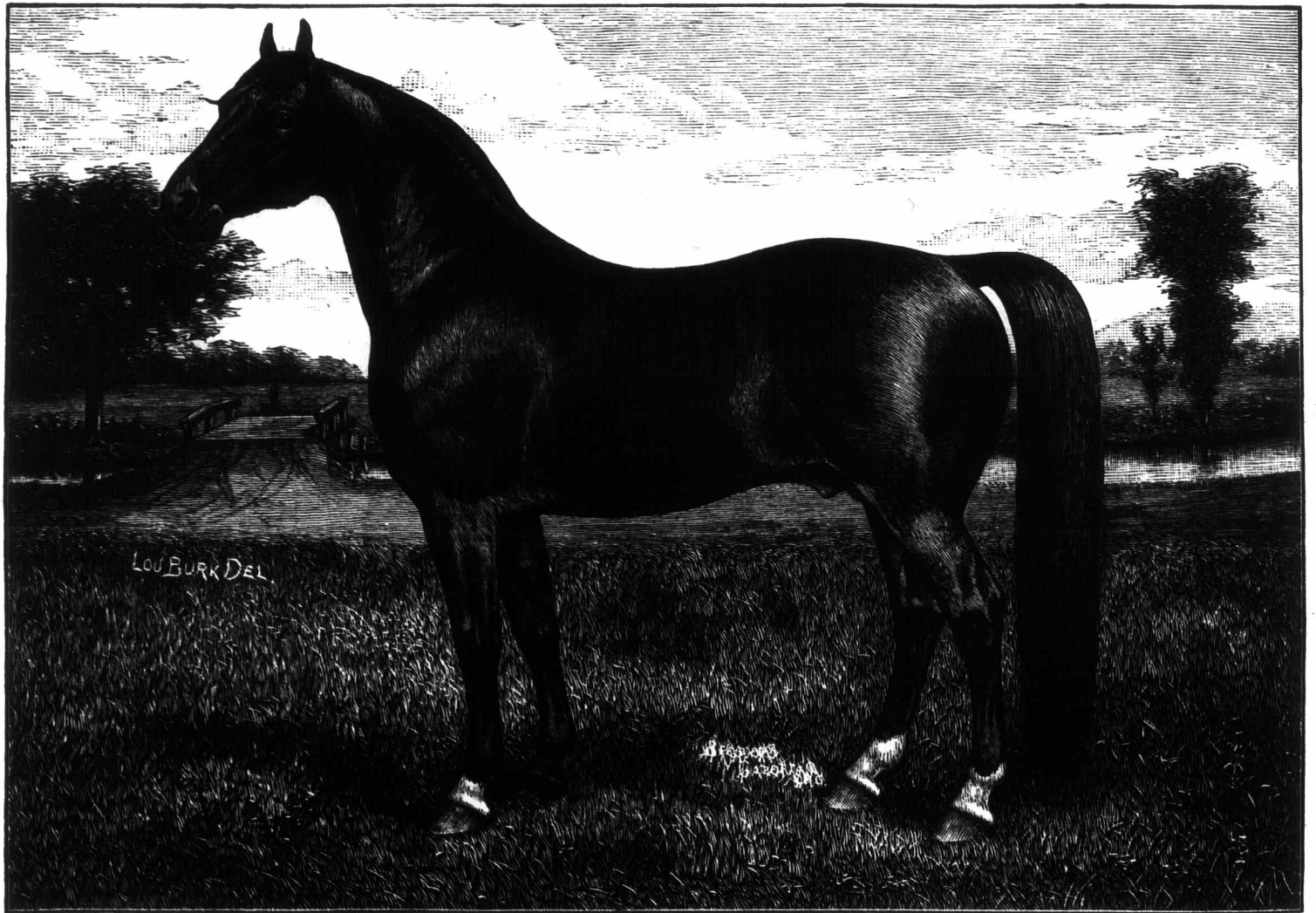
This farm, consisting of 94 acres, is situated on concession 5, London Township, four miles from the City of London, Ont.

A large portion of this farm is a flat, which sometimes overflows in the spring of the year, and produces pasture and hay in quantity and quality rarely to be found. For instance, sixteen acres of hay were cut last year and fifty tons taken from it. Out of this 94 acres 24 are plowed and 12 are yet in woods. All the feed is cut and the grain ground. Two men do all the work on the farm, both summer and winter, except one additional hand for six weeks during haying and harvest-

the high-bred trotting stallion, "Middlesex," son of "Hambletonian," the greatest sire of trotting horses known; his name is a household word among all horsemen on this continent. In his younger days \$25 was charged for his service, but as his reputation became known the price of his services was gradually increased, and to prevent over-work, for the last ten years of his life \$500 was charged for his services per mare. He made a net earning of \$100,000 for his owner, the late W. M. Rysdyk, of Chester, Orange Co., N. Y. "Middlesex" was bred by Daniel Kelly, of Greenwood Lake, Orange Co., N. Y., sired by Rysdyk's "Hambletonian," 1st dan by "Fiddler," son of "Monmouth Eclipse." The great demand for really fine carriage

impt. bull, "Belooch," brought out last season, stands at the head of his herd and is a very fine animal. On the farm also are forty-six pure-bred Shropshire sheep, imported or bred from imported stock.

This we should look on as management to be copied and deserving attention. This farm will return a handsome profit to the owner, do a great good to the county in which it is situated, and to the whole Dominion. Mr. Hodgens is a gentleman whose word can be relied on. To see so much stock, of such value, and every one looking first rate, and at a cost of only \$300 for extra feed, and two men one year and one for six weeks, is what should and must cause our farmers to enquire and see



Drawn and engraved for the Farmer's Advocate, London, Ont.

FIRST PRIZE ROAD AND CARRIAGE HORSE, "ALBION."

ing. Only \$300 was paid out for extra feed and bedding during the last year, one-third of which was for straw; one-third for hay, which has not been used, and the balance for oats.

Mr. Hodgens purchased the farm eight years ago, and laid out his plans of what he wished to do, namely, establish a stock farm deserving of the name, his principal aim being to excel as a breeder in raising fine road and carriage horses. For this purpose he secured several fine mares, some of the "Royal George" family, and "Grey Norman 4," by "Highland," a son of "Hambletonian," some having a record in the thirties.

At the head of the horse department stands

horses shows us that the County of Middlesex now stands second to none in her facilities for raising this valuable class of horses, and these two stallions must keep this county in the foreground for carriage horses in coming years. Her reputation has not been low up to the present. Not only have the farmers of this County an excellent opportunity of improving their stock; but this establishment must draw the purchaser of the best from all parts of the Dominion, for where the best are the best buyers will come. Mr. Hodgens does not confine his entire energies to breeding. At the time of our visit he had twenty-six horses, mares and colts on the farm; also a nice herd of fourteen Shorthorns. The

if they can make as good a showing.

"Albion,"

of which we now give you an illustration, drawn and engraved for the FARMER'S ADVOCATE, is the joint property of Messrs. Hodgens and Geary, of London Township, and is one of the most perfect models of a horse to be found. He has a large proportion of Hambletonian blood in him; he carried off the first prize and diploma at the Western Fair in 1879, first prize at the Provincial in 1881, and first prize and diploma at Western Fair, 1883.

For growing plants a weekly application of diluted manure water will work wonders.

The Dairy.

A Good, Low-Priced Creamery.

We have obtained of Charles P. Willard & Co., 280 to 284 Michigan Street, Chicago dealers in dairy supplies, the following plans, specifications, and illustrations of a building for a good low-priced creamery. The lumber is counted at Chicago prices but our readers can easily adapt the calculations to the prices in their particular localities. Much of the creamery apparatus would have to be procured from the other side, but the lower prices of machinery here would counter-balance freight and duty, so that the following estimates would very closely apply to Canada:

Main creamery building 20 x 40 ft.; ice-house 20 x 30 ft.; boiler-room 16 x 18 ft.; divided as follows and for use as described:

Main part divided into five rooms; receiving-room 9 x 20 ft., slanting floor and drain. Can be used for receiving and straining cream, washing cans, etc.

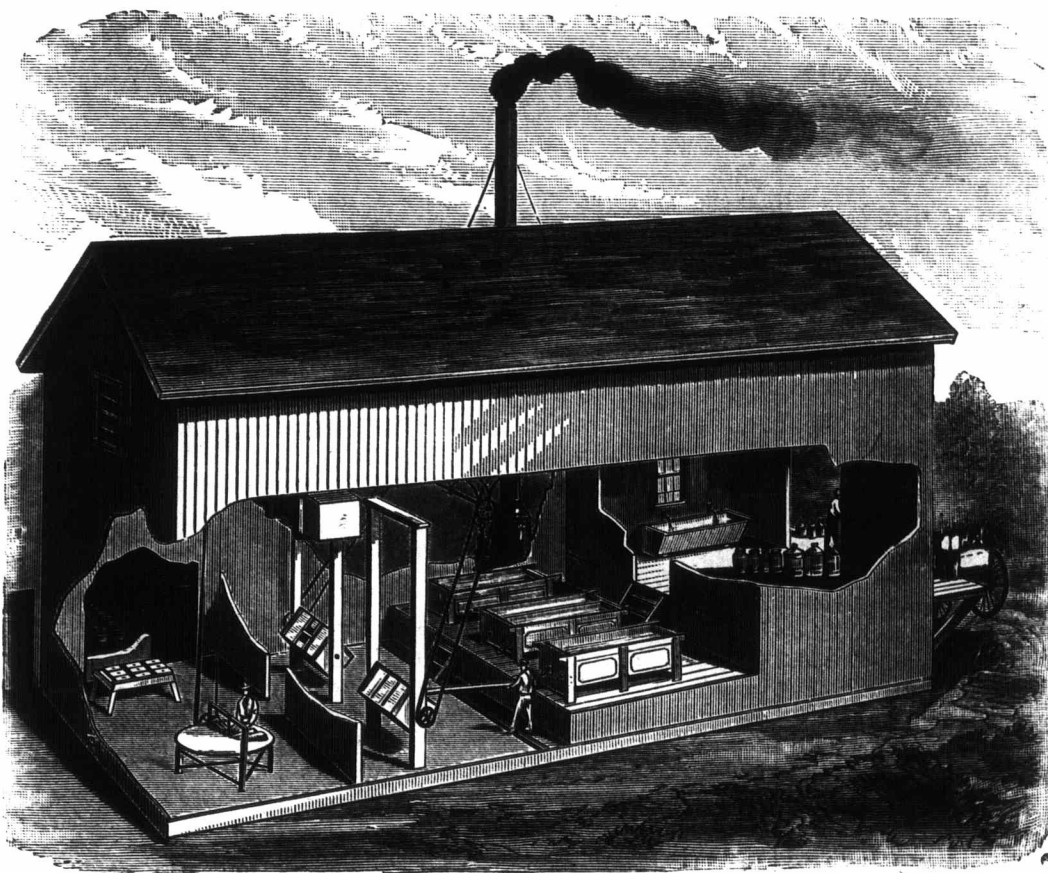
Floor elevated four feet above sills. Cream-room 12 x 20 ft.; slanting floor draining on to churn-room floor; used as a cream tempering-room; also floor elevated two feet above sills.

Churn-room (9 x 20 ft.) has floors on a level with sills, slanting toward cream-room, with drain at the junction with elevated floor of cream-room.

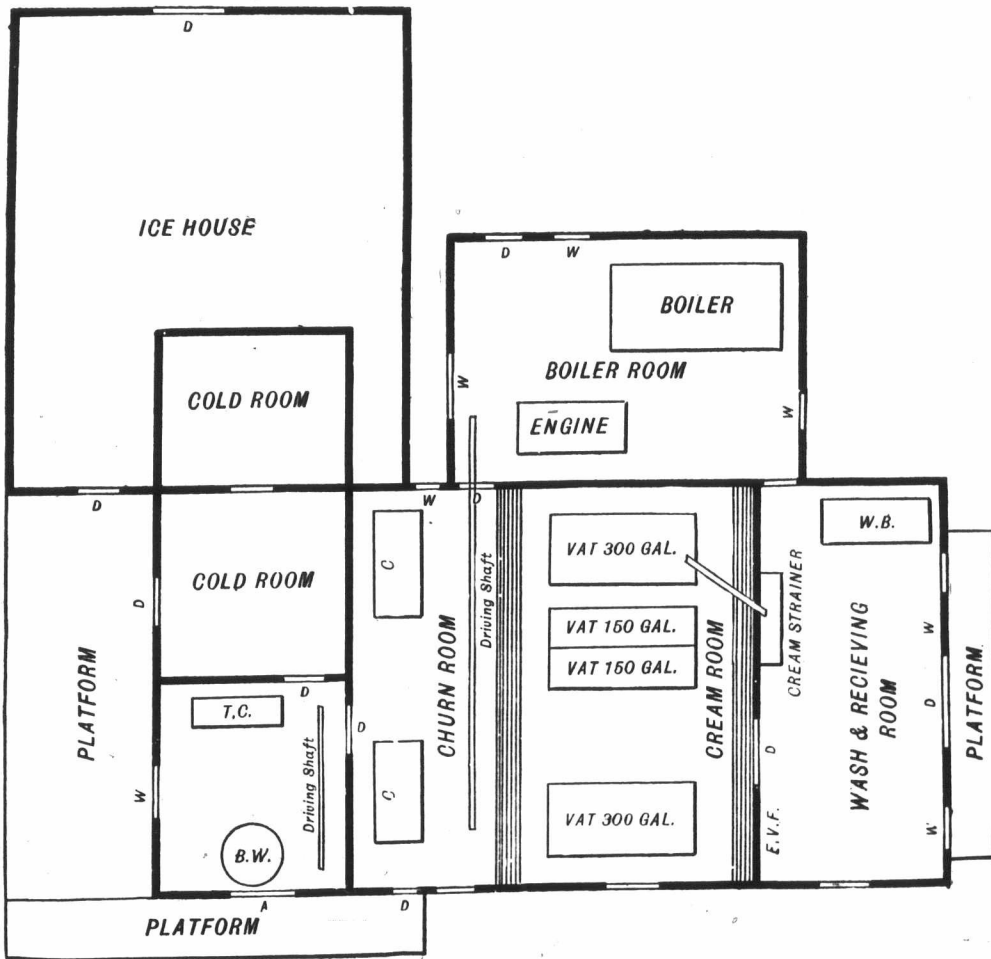
Butter-room 10 x 10 ft.; slanting floor; drain connects with

main drain in churn-room. Cold-room No. 1 (10 x 10 ft.) can be used as storage for salt, tubs, or butter. Cold-storage room No. 2, for storing butter, is 10 x 10 ft.; is built in ice-house and is covered

with galvanized iron, and surrounded with ice. The creamery is built in the following manner: Sills (6 x 8) on stone or brick foundation. Joist for elevated floor (2 x 8) spiked to studs supported in centre with 4 x 6 timbers, shored up on pillars. Ends shored up with 2 x 4 studs; outside walls 2 x 4 studding 12 ft. long. On outside of studs nail rough in. boards; paper with building paper, fur on it with in. strips; side with dropping or stock, boards stripped; on inside of studs rough-board-paper, fur out with inch strips and cell with fence flooring, ceiling overhead with fence flooring; floor laid with clear flooring; partitions ceiled on studs set flatways, on both sides, leaving two-inch air space. Cream and churn-rooms can be in one, or partitioned, as desired.



A MODEL CREAMERY.



GENERAL PLAN OF CREAMERY.

The above-described creamery has capacity sufficient to manufacture from 700 to 1200 lbs. of butter a day. To enlarge its capacity add to the width of main building. The raised floors are constructed for convenience in handling cream. Cream taken into receiving room, strained and carried into vats through conductor pipes; also from vats to churns through conductor pipe, saving all lifting of cream in cans, rendering it possible for one man to do one-half more work than in a creamery without raised floors. An office can be taken off of wash-room if desired.

The following will

be found a complete bill of material for this creamery as shown below :

MAIN BUILDING.

For sills—6 pieces 6x8 ft. long; 2 pieces 6x8 ft. long. Lower joist—32 pieces 2x8, 20 ft. long; upper joist—32 pieces 2x6, 20 ft. long. Rafters—42 pieces 2x6, 14 ft. long. Studding—109 pieces 2x4, 12 ft. long. Flooring—1,000 ft. Siding—1,900 ft. Casing and cornice—1,200 ft. Sheathing—4,100 ft. Ceiling—4,300 ft. Strips—1x2 in., 900 Paper—2,000 square ft. Shingles—10,000.

ICE-HOUSE.

For sills—2 pieces 6x8, 30 ft. long; 2 pieces 6x8, 20 ft. long. Rafters—32 pieces 2x6, 14 ft. long. Studding—62 pieces 2x6, 12 ft. long. Sheathing and roof-boards—2,300 ft. Siding—1,700 ft. Cornice and casing—300 ft. Strips—1x2 inches, 300 feet. Shingles—9,000. Paper—1,400 square feet.

BOILER-ROOM.

For sills—2 pieces 6x8, 18 ft. long; 2 pieces 6x8, 16 ft. long. Studs—40 pieces 2x4, 12 ft. long. Rafters—14 pieces 2x4, 18 ft. long. Sheathing—1,000 ft. Ceiling joist 2x4, 16 ft. Siding—800 ft. Shingles—3,000. Twelve 10x16 twelve-light windows. One keg of 6 d nails, one of 8 d, one of 10 d, one of 20 d, and 75 lbs. 4 d nails. Labor equivalent to four men's work for twenty-five days.

The lumber bill includes material for window casings and doors. It will take about five and a half rolls of sheathing paper, costing about \$5.50. The Peshtigo Lumber Company estimates the cost of the lumber and shingles at \$512.25. Thus it will be seen that the total cost of the creamery, according to the plans and specifications here given, is as follows :

Cost of lumber, including shingl s.....	\$512 25
Windows glazed	27 72
Sheathing paper	5 50
Nails.....	14 25
Labor, 100 days at \$2.50 per day.....	250 00
Cost of machinery and outfit	1082 85
Total cost.....	\$1892 57

The following list of apparatus suitable for this size creamery has been furnished us by the house above mentioned :

1 six-horse power Monarch engine, with one six-horse vertical boiler all complete, with Hancock inspirator.....	\$315 00
3 300-gal. steam vats.....	120 00
2 250-gal. creamery churns.....	840 00
1 Power butter worker.....	35 00
1 Covered crank suction and force pump.....	50 00
1 240-lb. Union family scale.....	25 00
2 Butter salting scale.....	6 00
1 Butter ladles.....	5 00
2 14-quart iron-clad milk pails.....	25 50
16 Feet 1 7-16 main shafting.....	1 00
6 " 1 7-16 counter ".....	8 80
1 Pulley 24 x 5 x 1 7-16.....	3 30
1 " 16 x 5 x 1 7-16.....	6 75
2 " 12 x 8 x 1 7-16, flat face.....	4 40
2 " 12 x 5 x 1 7-16, round face.....	9 20
1 " 6 x 6 x 1 7-16, flat.....	7 00
400 Common-sense cream-setting pails.....	3 50
12 30-gal. jacketed cream carrying cans.....	2 80
	300 00
	126 00
	\$1082 72

SIR,—I am a subscriber to the FARMER'S ADVOCATE, and I like it well, and think that no farmer that consults his own interests and the good of his fellows can afford to be without a good agricultural paper like the ADVOCATE.

Cavendish P. O., P. E. I. C. MACN.

Butter vs. Butterine.

BY J. GOULD.

It is a general assertion that the only way that butter frauds can be driven out of the market is by making the better grades of butter so abundant that there will be no demand for the frauds or counterfeits. This assertion is based upon a supposed fact, that consumers prefer bogus butter to the inferior dairy produce. So long as the fight for supremacy was between butter and oleomargarine, there was some show in the argument, but now that butterine—a product of butter and deodorized lard—is the disputant, the tables have changed, and there is far more evidence to go to show that butterine is pushing the fine butter aside, and usurping its place. Then who is responsible? Not wholly the dairymen, for 999 times out of the thousand the dairyman sells butter free from adulteration. Then it is asserted that consumers, as a rule, prefer butterine of about the same grade, than butter which is not always uniform in quality. Then the consumer, if this is true, is the "worker of evil," and if he prefers hog lard and some butter, to a first-class butter, then the occupation of the dairyman has gone, and hogs will in the future be the "all purpose" dairy animal that is being so persistently looked after by the dairymen. Now is this so, or are the great commission men in the city the real active enemy of good, genuine butter? As a rule, commission men deal in butterine, etc., as well as dairy butter, which is best seen by the enormous sales of the Thurburs of New York. The great bulk of dairy butter is sent to these men to be sold on commission, while butterine is purchased at manufacturers' prices. The profits on butterine are therefore very much larger than the commission on butter, and so we find these men all the time asserting that the bogus butters are "better than the bulk of the dairy butter," and that "their customers prefer it," and that they "sell it for exactly what it is," and that the retailers are the "ones who palm it off as genuine butter."

But the question may be pertinently asked, Who label these packages of butterine "Clover Hay Creamery," "Fern Hill Creamery," and very close imitations in name of most celebrated creameries? If their customers prefer the butterine to the genuine, why label these packages creamery? Why should they not brand their packages "choice butterine," from Grimes & Grimalkin, manufacturers, Lard St., Chicago, or New York, as the case may be?

It is right here that the dairymen are placed at a disadvantage. The goods are labeled what they are not; they are sold by the same men who sell the dairy butter; the dairymen are not there to point out the deception to the buyer, and the commission men sell the article which brings the most money to them for their "experience and tact as business men." Lastly, the law winks—at least in the States—at adulteration of foods, and the result is that dairy butter stands no show in the market, and the few creamery men play double: first to sell a very fine article to the butterine men, to mix with their deodorized lard; and second, it is thus for their interest, and the commission men, to make a wide difference between the price of dairy butter and the product of the creameries, so that between the

two butterine can find ready sale. By this it is seen that the danger is that butter is soon, at this rate, to be pushed aside, and made to defend its character, and get a permit to be sold as butter, and that at the hands of those directly and indirectly interested in the bogus butter trade.

Nor do I opine that these men are sinners above all others. There is fraud back of all this, or else all signs fail. Why do these manufacturers of deodorized lard send their circulars and agents to factories, public and private, and offer at "rates which must prove satisfactory to you," etc., etc., this butter, oil or deodorized lard to "keep up the average June butter yield of creameries?" Not that the bait catches every time, or once in a hundred, perhaps, but that this adulterant is being sold by the tens of thousand pounds monthly, none can doubt; and if they were to do so, had they been at Cincinnati at the National Convention, last December, all doubt would have been dispelled upon this point. So here genuine butter is again made to play a subordinate part to the manufactured article, or, what is the same, an admixture of butter and lard, and sent into the market as genuine creamery. The commission man, grocer, and consumer are each deceived, and the dairymen are brought to disgrace by a few of their own number.

The conventions this winter have denounced bogus butter, butterine—when city made—and pointed out all sorts of remedies, and resolved, time and again—but, if we remember aright, little or nothing has been said about this equal and yet more dishonorable deception, beside which silver-plated, white-metal dollars are quite respectable.

Now, what is the remedy for all this? "National legislation," says one; "Make so much good butter that the frauds won't sell," says another; "Drop the price of creamery butter to 20 cents on an average," says another; "Make dairy butter in the winter," speaks up a fourth; "Make good butter and let the consumer take his choice," says the fifth; and the sixth one remarks, *sotto voce*, "What are you going to do about it, anyway?"

Briefly, competition with high prices can never force these compounds out of the market; national legislation would not reach the case in point wholly; the average price of creamery butter at present cost of production cannot be sold at an average of 20 cents, and the "choice" business does not solve the problem, for the present high state of the art does not give a "show" oftentimes for a choice on the part of the consumer.

The remedy, we think, lies in all of these suggestions. Legislation to compel all foods to be sold for what they are, and to put each upon its exact merits. Winter dairying to give a yet more average production, and thus remedy the "evil" of very high and very low prices for butter. Introduce co-operation in butter-making, so as to raise the quality of the butter made, so that there would be no choice between poor butter and a represented good butterine, but reverse it, so that the butter would be good; and lastly, let these co-operative creameries establish butter marts and deliveries to customers in the large cities, as part of the system of co-operation, and so conduct them that there can be no suspicion; and

lastly, again, let the manufacturers of genuine butter deal only with those commission merchants who refuse to deal in butterine, and touch not the "unholy thing."

Milk as a Medium of Infection.

A recent epidemic of enteric fever which spread to a considerable extent in London (England), is another proof of how disease may be communicated by means of milk. It had previously been demonstrated that scarlet fever and diphtheria were disseminated by the same agency. The "Popular Science News" relates a series of experiments conducted by Dr. Dougall, in which he proved that of all natural bodies water had the greatest solvent power, first absorbing and then condensing more gases than any other fluid, and as milk contained 88 per cent. of water, the former fluid had naturally the same power. Having detailed the process by which milk became acid, curdled and putrid, he tested its infectious properties by enclosing in a jar a portion of certain substances which gave off emanations, together with a uniform quantity of milk, for a period of eight hours. The following table shows the substances used and how the infected milk operated on the sense of smell:—

1. Coal gas.....	Smell in milk—distinct.
2. Paraffine oil...	" " strong.
3. Turpentine...	" " very strong.
4. Onions.....	" " very strong.
5. Tobacco smoke	" " very strong.
6. Ammonia.....	" " moderate.
7. Musk.....	" " faint.
8. <i>Assafœtida</i> ...	" " distinct.
9. Stale urine....	" " faint.
10. Creosote.....	" " strong.
11. Cheese (stale)..	" " distinct.
12. Chloroform....	" " moderate.
13. Putrid fish....	" " very bad.
14. Camphor.....	" " moderate.
15. Decayed cabbage	" " distinct.

Several other substances showed not only a strong smell, but also precipitates were observed, proving that chemical action had taken place. Similar offensive odors were produced in experiments with cream. A knowledge of these facts is necessary in order to guard farmers against keeping their milk stored near chambers occupied by sick persons, or letting it stand in the stables for any length of time, while milking. If any suspicion arises as to cleanliness of the apartments in which milk or cream has been kept, the safest plan is to boil the milk, and thus destroy all the germs of infection. Some hygienists even go so far as to say that all milk should be boiled before used. These experiments should also serve as a warning against allowing stagnant pools to exist around the premises.

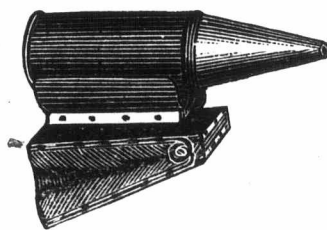
At a recent meeting of the North-western Dairymen's Association, a statement was made to the effect that one-third of the cows were milked at a loss, one-third at neither a profit nor a loss, and the other third had not only to make up for the losses of the former, but to determine the profits of the whole dairy industry. These facts, though perhaps not absolutely correct, have great force, and may also be applied to the cows of the Dominion. This defect may be attributed partly to bad stock, and partly to a bad system of feeding and management. The argument that labor costs nothing and feed costs very little, is too absurd for consideration. All the profits lie in extra labor, food and management.

The Apiary.

The Benefit of Smoke.

The Indiana Farmer says:—The use of smoke for controlling bees runs back as far as the domestication of the bees themselves, but the modern application far succeeds the old style "smudge." The belief in some minds that bees have a special spite against any one person more than another is not verified by experience. That some will be stung much oftener than others is easily accounted for by the difference in temperament and disposition. We give below the cut of a smoker, which is one of the most necessary articles in the management of bees.

The great secret charm by which bees may be controlled can be summed up in the one little word "smoke." Yet by the abuse of this mighty charm the object to be gained may be defeated. A too vigorous application of the remedy may precipitate the catastrophe which it is calculated to avert. The object of the smoke is to cause the bees to fill themselves with honey, as while in this condition they are less likely to sting. A little smoke at the entrance will cause the bees to rush to the honey and fill themselves; or it may be applied at the top of the frames with the like result. But if persisted in, before the bees have time to fill



up, many of them will be forced to leave the combs. It is the bees in the air, or a few who may be sitting farthest from the stores, from which you may expect the stings, and from which they will come nineteen times out of twenty. It is always best while handling bees to at least have the smoker burning, although you may not need it at all times, especially during the honey harvest. With beginners, it is best they should use smoke, until they acquire that confidence that they may resist the desire to drop a frame, or jerk a hand every time a bee sees fit to make the hand a resting place.

The first thing before disturbing the hive in any way, puff a few whiffs of smoke in at the entrance; this will generally drive in the sentinels, and also prevent any from coming out. If they are Italians, this will almost always be sufficient; but if they are the crosser kinds, it had better be repeated a few times. This will frighten and excite them, and they will at once fill themselves with honey. After waiting a few minutes, the lid or cover to the hive may be raised, but do it gently; in fact, always do everything gently about them, as all quick motions or jars of the hive tend to exasperate them.

As soon as you raise the lid a little, send in more smoke, and enough, if necessary, to drive them down and out of the way; then proceed to put on or take off boxes, or do all the work necessary. If they begin to come up or to dispute your right, use more smoke, to convince them you are master of the situation. But

from the very start just make up your mind that you can and will, and that is half of the battle. With Italians, after the first few puffs of smoke, they can often be handled for an hour or two without any more smoke, but with blacks or hybrids it may be necessary to repeat the dose every few minutes. Smoke does not injure them at all.

[These smokers can be had from E. L. Goold & Co., Brantford, Ont.]

Various Bee Notes.

At the winter meeting of the Champlain Valley Bee-Keepers' Association of Vermont, some interesting facts were elicited. One member said his Italian colonies had given an average of thirty-two pounds more of honey and as many swarms as his black bees. Italian bees die in wintering while black bees lived. J. E. Crane's 300 colonies yielded, in 1883, 25,500 pounds of combed honey and 1,000 pounds of extracted honey. L. C. Thompson's fifty-eight colonies yielded 5,000 pounds, one colony alone giving 250 pounds. The best reported yield from one colony was 273 pounds. The yield of H. P. Isham's ten colonies sold for \$151. G. S. Brown reported he had not been successful in doubling weak colonies in spring. He had found it better to take a comb of brood from a strong colony and give it to a weak one. H. B. Isham preferred to let the strong ones alone and take from the weak. Edson Smith takes two medium colonies, feeds them and then takes brood from these to help every weak colony. J. D. Brooks has lined bees for five miles, yet he lost many of his bees in crossing Lake Champlain, his apiary being located on the east shore and the distance across being three fourths of a mile. H. L. Leonard thought large apiaries should be located at least four miles apart.

PROFIT IN BEES.—That bee-keeping pays is no longer a question of doubt, says the Indiana Farmer. It pays and pays well, for all money and time invested, but it is not all play and no work. Bees require care and attention, as do all other kinds of God's creatures which man has subjugated for his own benefit. They need probably less care than fowls or farm stock, but what needs to be done must be done at the proper time, and those who cannot or will not do this will make but poor success in this industry.

Almost every one who keeps bees has more or less old combs to be made into wax. The easiest way to do this is to make a bag of the necessary size out of some loose cloth, like an inside coffee sack. Pack your comb in this, and sew or tie it up tightly; then put the bag into a boiler of hot water, and with something press it well down into the water. As the wax melts it will escape through the meshes of the bag and rise to the surface of the water, while the dead bee and other impurities will remain in the bag. Skim off the wax, re-melt, and work it into any shape you like.

A fine dressing of pulverized muck or of wood ashes applied in spring will benefit orchards. Wood pile scrapings are also good. If you have none of these use commercial manures, but fertilize them in some way. Barnyard manure is preferable for autumn use.

Stock.

The Shire Horse.

This horse will henceforth be less known under the name of the English cart horse, the name of the English Cart Horse Society having been changed to that of the Shire Horse Society. The Shire horses are steadily but boldly coming to the front in England, and are becoming successful rivals of the Clydesdales in Scotland. The heralds of such booms usually have some motto to proclaim, and the one in this case seems to be, "No feet, no horse." They contend that the principle of judging a horse by his top is fallacious. The opponents of this horse have insisted that his weak point lies in the lack of pedigree. It is true that many of the race do not possess pure ancestral blood, but this does not alter the fact that the cart horse proper has a pure and direct line of ancestors. It has also been said that the breed has no distinctive name, and too much discount has been made on this account. This statement fails to establish the impurity of the lineage. What its faults may be, it certainly has none which have been attributed to the Clydesdale or the Percheron. For heavy work and long endurance it is hard to find fault with the Shire horse.

Hints on Horses.

BREEDING.—Before selecting a stallion for the mare, the first reflection should be—What am I breeding for? It may be that the anticipated foal is intended for general work on the farm,—perhaps for a local or a foreign market; then the requirements of these markets should be discussed. If there be any such thing as a general purpose horse, it is found in the Canadian animal. It is hardy—especially on the feet, where some breeds are unsound; it is long-lived, easily kept, medium weight, a capital roadster, makes tolerably good speed, draws well, and is capable of much endurance. To these qualities a good sire should add a mild temper, a proud spirit, and a symmetrical contour. In selecting a stallion, not only the purpose for which the progeny is required is to be taken into consideration, but also the faults of the sire and dam, and, if possible, any defects that may have existed in the ancestors. Any hereditary taint in the parents or their kin is almost sure to be perpetuated. It is an injurious practice to allow the dam to be served before she is matured. The result is not only ruinous to the mare but also to the offspring. Both must suffer, it being unnatural to expect that the food can supply nourishment for the complete development of both mother and young. Besides, her conformation grows unsightly, and the foal becomes dwarfed. The

early maturing qualities of the breeds will determine whether the first foal should be dropped when the dam is three or four years old. A year spared now will add several vigorous years to the latter end of the mare's life, as well as being conducive to the welfare of all her progeny. On the other hand it is equally absurd to expect thrifty foals from mares which have become disabled by age or ill-usage. Such foals are subject to rickets and many other infirmities, and may do for cheap nags about the farm, but are useless for the market. It is impertinent to expect that the strong points of the sire will make up for all the defects of the dam. To put small mares to large stallions has proved to be an injurious practice; it is much more desirable that the reverse should be the case. Although in-breeding is not desirable, it is not so injurious as generally supposed, especially when there are no prominent imperfections in the parents, or no predis-

regarded as certain."

THE STALLION.—Practical horsemen have so many different methods of feeding and exercising their stallions that the only infallible direction we can give is: Use your own judgment. Each groom would treat different breeds of horses differently, according to their varying traits of character and other conditions. Yet there are certain general principles which govern all cases. The stallion should be kept in a fair condition at all seasons of the year, but don't stimulate the system by over-feeding. He should attain the vigorous period of maturity before he enters actively upon the duties of life. He should have plenty of exercise, be kept clean, have ready access to good water and wholesome food, and be accommodated in a well ventilated and well lighted stable. It may appear irrational to say that he should not be blanketed in winter, but if his apartment is comfortable, he is much better without a

blanket, for any covering which is not evenly distributed over the whole of the body and limbs, is more injurious than beneficial, except when the horse is perspiring freely, and then the blanket should not be put on until he commences to cool. A change of food can scarcely occur too often. If it were possible to know when the stomach had the proper amount of distension, how much of each ingredient of the food was required to produce growth, repair waste, and supply the desired quantity of heat, fat, and mechanical work, then there would be no particular necessity for a change of food; for all the organs would have a natural and uniform amount of work to perform; but in the present state of our ignorance in this respect, a change of diet is necessary to give partial relief to



THE SHIRE OR CART HORSE.

THE PROPERTY OF POWELL BROS., SPRINGBORO, CRAWFORD COUNTY, PENN.

position to disease. The period of reproduction varies considerably; but the period of the first foal will be a guide to future periods. After conception, rest the mare for a while, but afterwards it is better to keep her constantly employed at such work as will be required of her offspring, being cautious not to strain her with heavy work. As it is important to know whether a mare is in foal, let us quote what the best authority has to say on the subject:—"After the first service of the horse, and before the next trial, on examining the vagina, or bearing, if conception has not taken place it will be of a fresh, bright, or florid and moist appearance, with a clear drop appearing at the lower part, and which, if touched, will incline to extend; but if conception is present, a different appearance of the surface of the vagina will be presented. It will be found dry, and of a dirty brown or rust color; and a dark, brown looking drop will replace the former clear drop. When these latter appearances are present, pregnancy may be

overburdened organs, and to stimulate others which have had undue rest. Some contend that the stallion should be fed equal rations all the year round, no extra food being given during the travelling season. This might do with those breeds which have a tendency to keep in a uniform condition under most all circumstances, or when the drain on the system, whether by service or by exercise, is constant. A great error is almost habitually committed in not giving the stallion constant work or exercise. Like the mare, he should be engaged in that kind of work which his progeny is destined to perform, and when exercised, he should be turned into an inclosure and be allowed to exercise himself in his own way. If the drain on the system occasioned by service is equal to that caused by exercise during the other seasons of the year, then by all means feed regularly; but as this is rather an unnatural supposition, it would be advisable to feed extra during the service season. It may seem rash to say that stallions should

be worked, but there are special reasons why they should. They are not like bulls which are kept for raising beefing stock, where fattening propensities are required to be transmitted, not a hardy, vigorous constitution. If stallions are raised by superfluous nursing, they degenerate, and they transmit this propensity to their offspring; and if a breed once becomes famous say for draft purposes, this quality will deteriorate unless kept up by practice. If the exercise take the form of racing, a racing propensity will be finally developed in the progeny. In feeding, the likes of the horse may be studied to a considerable extent. There need be no essential variation from the food given to brood mares or to farm horses heavily worked and well kept. It should be remembered that the horse has a smaller capacity of stomach in proportion to its size than any other domestic animal; hence it must have more concentrated food. Most of the ailments which horses are heir to arise from imperfect feeding, especially in giving them too bulky food, whereby they are required to eat too great a quantity in order to get the necessary amount of nutrition. Even the time honored ration of timothy and oats has too much bulk, and should therefore be supplemented by good clover, bran or beans. Succulent food should form part of the ration all the year round, such as carrots, mangels or ensilage in winter, and grass or green fodder in summer. If much strengthening food, such as bran and peas, be given, it may be advantageously fed with good chaff, or even good straw mixed with the hay. A great mistake is often made in adding corn to a ration of hay and oats. This may do when there is plenty of good-clover in the ration. Corn should only be fed in connection with peas, beans or bran. The judicious feeder will soon find out the quantity to be fed, which will vary considerably according to the size and condition of the animal, and the work required to be performed. Succulent foods, as bran mashes and green fodder, are necessary for regulating of the bowels, and care should be taken that the change from dry to succulent diets be not too sudden. Of course grain is better when ground, hay when cut, and mangolds when pulped, but very few farmers have facilities for doing this. When corn meal is ground fine, it must positively be well mixed with coarser foods, else it will clog in the stomach. For stallions in active service, small quantities of wheat may be given with advantage for a change. But feed is only a portion of the management. Kind treatment and cleanliness are very important factors. Too much care cannot be exercised in keeping the feet clean, especially during the muddy season, and the collar should be wiped every day, and kept in a plastic condition. Two things should be specially borne in mind, viz.: that like produces likes and that over feeding and nursing make breeding less certain, and tend to the degeneration of the race.

Correction.

In the last December number of the FARMER'S ADVOCATE, page 361, our Chicago correspondent stated that the imported Polled Angus steer, Black Prince, was said to be owned by Hugh Nelson, of England. Our correspondent was in error; this celebrated steer was, and is still, the property of Messrs. Geary Bros., of London, Ont.

The Ewes and Lambs.

This is the most critical time of the year for ewes and lambs, and more losses are apt to occur during this month than all other seasons of the year combined. If the ewes have not been properly fed, they will have a strong tendency to roam about in quest of grass, and the lambs will be weaklings. If allowed to wander at pleasure, they will likely take too much exercise after the close confinement of winter. At first they should not be left out more than a few hours each day, and if the weather turns suddenly warm, care should be taken that they have plenty of shade and a supply of wholesome water. This month will test the skill of the best flock-master; his eye should be constantly on the flock. There is no plan equal to the hurdle system. A corner of some luxuriant pasture should be hurdled in, and grain and bran fed to the ewes, but as little to the lambs as possible, as the dam's milk is better for them. A little oil cake should also be on hand for medicine as well as for food. This will regulate their bowels more effectively than bran. The strongest arguments in favor of the system is that little manure or grass is wasted, and any extra food will be repaid in the extra fertility of the land. This portable fence may be changed from time to time as the inclosure becomes bare. It is an excellent plan to inclose a thistle patch, throwing salt around the stems of the thistles. The sheep, in licking up the salt, will eat the thistles, and in this way many a patch may be totally exterminated. In fact, soiling the sheep in these inclosures all summer has been found to be more profitable than allowing them to roam the pastures. If they are allowed free scope, the pasture should be changed at least once a month. A pasture containing a variety of grasses is best, as it improves the quality of both milk and mutton. If the land is undrained or low and the weather wet, great care must be taken.

CASTRATING AND DOCKING LAMBS.

Castration is usually performed when the lambs are from two to four weeks old. The younger the lambs the less risk. But it is still more important that the lamb be in a healthy condition at the time it is operated on, and that the weather be mild. It should only be done when there is a prospect of a fine evening; and the shepherd should be frequently amongst the lambs for a day or two afterwards, gently stirring them up, as they are better for moving about at intervals until all fear of inflammation is past. With those precautions, it is seldom that any casualty results. The operation is usually performed by the shepherd. It should be done as gently as possible. One person holds the lamb with its back pressed against his left shoulder, and a hind and fore foot grasped firmly in each hand. Then the shepherd with a sharp knife slits up the scrotum, or excises the inferior parts of it entirely, and starts the testicles by pressing both hands against the belly of the lamb, afterwards cutting them away with his teeth till the spermatic cord is reached, when it is cut with the knife. The operator then pulls the lamb's tail sharply two or three times to replace the chords and vessels which have been so violently disarranged. Where the lambs are older and stronger, searing is recommended instead of drawing. Few shepherds, however, under

stand the searing method; and with young lambs, drawing is safer than searing. Before the lambs which have been castrated are let go they should be docked or have their tails cut. Docking is necessary to the health and comfort of all sheep that have to be folded, and, therefore, it requires to be performed on ewe lambs as well as others. The operation is, however, often rendered needlessly severe by shortening the tail too much, and causing excessive bleeding. In the case of hill sheep which are always on pasture, and never in wet and miry folds, the tail is shortened very little, if any, the last vertebra seldom being cut, but only the fleshy part on the end of the tail removed. Docking may be performed on a block with an axe or a chisel.

WASHING AND SHEARING.

A great mistake is made by farmers in washing their sheep. It is unpleasant and unhealthful for the sheep, and their labor is spent in vain from a pecuniary standpoint. No better rule for the time of shearing can be given than to leave the intelligent farmer to use his own judgment. Many show sheep are shorn in January and February. If they have comfortable habitations, this will not injure them so much as is generally supposed; in fact sheep thrive better in winter if not overburdened with wool.

DESTROYING TICKS.

Tobacco dust or juice is the cheapest and most effective remedy. The gritty remains of hogsheads of tobacco can be purchased cheaply, and one pound of the dust will be sufficient for ten sheep. The ticks soon leave the shorn sheep and take up their abode on the lambs. This is the best time to attack the ticks. The dust need not be scattered all over the lamb, but is quite effectual when placed in rows along the length of the animals. Four rows on the circumference of the body of each lamb will be sufficient—one on each side of the backbone, say six or seven inches from it, and two other rows at intermediate distances. One application a year will be sufficient. This is also a good remedy for lice on cattle or other animals.

Diseases of Swine.

That the swine plagues which have ravaged the United States are caused by impure food and drink admits of no doubt. Many think that because hogs will eat anything, anything will do for them. Unsound corn has often been fed because it is a few cents per bushel cheaper, and hogs have been forced to drink the filth of the mire in which they were wallowing. During the busy season they have been almost entirely neglected, and then when the fattening period came they were gorged. Most diseases are due to minute organisms, known as "disease germs," and these exist in myriads where decaying vegetable matter abounds, and in the surrounding atmosphere. These germs are readily communicated to the hog's system, where they soon develop into disease, and may be conveyed to the offspring as a constitutional taint, or by the medium of the milk. Cattle suffering in the same way can communicate these germs to the human family by means of the milk or the butter, and this has been a fruitful cause of typhoid fever—possibly as much so as drinking impure water directly.

It is now known that the fever in hogs called "cholera" is so closely allied with typhoid fever that the best authorities pronounce them identical. The question arises—Are these plagues to be continued for ever? It is a recognized fact that those districts which were notoriously malarious, have become healthful just in proportion to the amount of cleanliness observed and drainage accomplished. It would be cheaper to purify all these receptacles of filth than to pay for the drugs and other nostrums which have been spent in vainly attempting to eradicate the infection.

If your cows are on pasture before they drop their calves, their udders are apt to become unnaturally distended with milk. In such cases the milk should be drawn several days before calving, else the absorption of the milk back into the system may cause blood poisoning by means of the fever produced. The best milkers are most subject to this attack, and this is the reason why some of the most valuable dairy cows often die from milk fever. Any highly stimulating food is dangerous immediately before the calving period. Care must also be taken that any change of food from dry to green, or from green to dry, be not too sudden. If the cows be stabled at nights, cleanliness is specially to be commended, and some deodorizer, such as gypsum, should be scattered over the floor.

Poultry.

Poultry Profits.

As you invite readers to give their experience, I give you mine in poultry business. I took stock January 1, 1883, and found I had 45 hens and 5 roosters; also 12 ducks and 4 drakes (all common stock). I did not keep separate account of eggs and chickens, but sold of both \$109.06; of ducks and ducks' eggs, \$149.91; total, \$258.97. I paid for feed \$67.29, leaving me a clear profit of \$191.58, besides using all the eggs we wanted for a family of five. This was \$52.46 more than I made from 20 pigs, and \$104.68 more than I made from seven acres of barley. Shall try an incubator next year.—[D. M. Walters, in Pacific Rural Press.

EXTRA BROODS.—This is the month for early chicks, and how to get the largest number from the fewest hens, provided they can care for them, is what is desired. The following is a plan sometimes tried: Set three hens at once. A week after set three more, and repeat with each succeeding week. Examine the eggs; cull out those not hatchable, and the third hen may not be supplied. Give her those under one of the next lot, and cull that trio the second week. The hens will each be kept on the nest four weeks, with chances for full broods. The difficulty, however, is that hens do not sit at the times desired, and the number ready must be used to the best advantage.

Shut up fowls without food for twelve hours before they are beheaded.

Do not forget to moisten the eggs under the sitting hen occasionally with warm water.

Guinea hens keep hawks away. They are noisy birds. Worse than a piano next door. They give warning to other fowls.

If you wish to raise a good many fowls you must keep them in separate small flocks. Large numbers do not flourish well together.

Garden and Orchard.

Tree Planting and After Care.

BY HORTUS.

Trees of any kind—whether evergreen or deciduous, whether raised in a nursery or taken from the woods, hard or soft-wooded, with the exception of willows, poplars and alders—thrive and grow best in well-drained soils. Any one can observe for himself that in wooded districts the largest trees are those that occupy hillocks and situations naturally drained, and that where damp and marshy places occur there exists only a dwarfed growth of willow and alder copses, and they grow there seemingly against their will. From this and practical experience we deduce this fact, that the first element of success in tree planting we must look for is to see that our ground is naturally or artificially drained. The next thing is to see that the ground is deeply plowed, if of a stiff and clayey nature; if of a sandy or loamy nature, this is not so necessary—provided always that it is in a well fertilized condition and contains the necessary elements of plant food requisite for the permanent success of orchards or other plantations.

Having your ground ready for planting, the next thing is to see that the trees have not been too much exposed. Let them be removed from woods or other places with care. See that they are kept frequently watered, and the fibrous roots properly protected from the sun and wind; or, if they are ordered from distant nurseries, ask the nurserymen to be extra particular in packing, saying you would rather pay a little extra for good packing than they should be hurriedly jammed in a box, or rudely and carelessly tied in a bale, as often is the case when the busy season of the nurserymen is on, which only lasts a short time.

During the months of April and May, the main planting season, we often have very severe changes of temperature, accompanied by strong winds. The thermometer will suddenly jump up from 50° Fahr. to 80°, with a penetrating hot wind. This kind of weather is particularly fatal to trees, and if planting during this weather, it is necessary to have the roots dipped in a thick mud when placing the tree where it is to stand. While advising planters to observe these safeguards and to be careful, on the other hand they need not carry this carefulness to excess, for where reasonable care has been exercised there can be no danger. All trees in the spring of the year are full of sap, and will stand considerable exposure before dying, but when trees are received in a very dried-up condition, they often can be restored to full vigor by burying root and branch under ground and leaving for a couple of weeks.

As a fact, trees do not suffer at all in the early transplanting season; the great danger lies in the hot dry weather usually experienced from the middle of July till the middle of September. This period of time, equalling two months, is the most trying time on newly planted trees. To guard against this time it is necessary to mulch your trees well right after planting. This keeps the soil damp and cool, and tides the young roots thrown out by the tree through the dry weather. The great thing

to mind is to have your tree grow the first season as much as possible, not merely to live and remain green, but to make a growth of some kind, no matter how short.

When planting, though we are repeating an old story, see that the hole is large enough to receive the roots easily and freely—no bending the roots or squeezing them in, but to fall naturally in the place as they were when first removed. The first spadefuls of soil throw in should be finely pulverized and shaken evenly through the roots; shake your trees a couple of times and tread firmly; don't be afraid to use your feet and tramp the soil well. Then level in evenly, leaving the top soil loose, and also leave a shallow basin around the tree, tapering from the outside rim of the basin to the trunk of the tree, so to conduct any rain to the centre, where it will do the most good; then mulch and stake.

The best season to plant evergreens is from the 1st of May to about the 10th or 15th of June, varying with the late or early seasons. Care must be taken to never let the roots of any evergreen be exposed, as they suffer more than trees of the deciduous class. An evergreen can be removed and planted with success any time at all that there is no frost in the ground, so long as this is observed, i. e., keep the roots wet and water freely after planting.

A great deal is said and thought of respecting luck in planting trees, and those persons who are said to have had particular success in planting observe the rule of keeping the trees from unnecessary exposure. There are also certain customs observed by some planters, such as putting stones in the bottom of the hole and throwing in a few oats or other grain, the parties doing so taking it as a supposition that on the growing of the grain some charm is exercised on the tree, which will make it grow also. The state of the moon is also noticed, it being considered that trees will thrive if planted when the moon is passing from the first quarter to the full, and they will not succeed if planted during the wane. Another supposition is that a tree should stand in the same position in its new quarters to the sun as when in the place from whence it is removed. These things we know are sincerely believed by a great many people, and many other rules equally absurd. We say, pay no attention to such customs; there is nothing in them. A little experience will give any planter all the luck and the charms he may wish to possess. In cold, damp subsoils, not well underdrained, placing a flat stone under the tree is good enough; this prevents any tap roots from going deeper, and causes the tree to push its roots in a lateral direction.

Never put grain in a new orchard, or allow grass or weeds to grow about the trees; this would be fatal to them. Any root crops may be grown, keeping the drills a moderate distance away from the tree. Never put corn in for the first few years. After four or five years have passed, then grain or grass may be grown or the orchard seeded down. When planting never put manure of any age or quality near the roots, or incorporate it in the soil by newly planted trees. Better to place on the top of soil around the tree as a mulch, when its juices can filter through the soil and thus come in contact with the young, feeding roots in a

natural way. No rubbish heaps or weedy corners, ridges of grass, or any litter, should be tolerated any way near young trees; they only serve as breeding places for mice and other vermin. Care should be observed in winter to tramp around trees where any drifts lodge, as here also mice go for protection, to the ultimate destruction of your trees.

Pumpkins.

We are as liable to booms in feed for stock as in the stock itself. As soon as a chemist analyzes a food and finds out its feeding value, he forms the nucleus of a boom. The much despised pumpkin, too insignificant now-a-days to be made into a pie for anybody who pretends to be civilized, has undergone the scrutiny of the chemical laboratory, and has been found to possess a higher feeding value than any of the roots. Roots are an annoyance to the average farmer; they demand so much labor. It is easier to grow 70 tons per acre of pumpkins than 30 tons of mangles, and counting both at the ordinary price of roots, say $\frac{1}{4}$ of a cent per pound, would give over \$230 per acre for pumpkins and only \$100 for roots. It would be no exaggeration to say that pumpkins would bring \$400 of feeding value per acre. Weight for weight, they are far superior to ensilage or meadow grass. They can be stored in an ordinary root cellar, and require less labor in every respect.

Water Melons.

The Cuban Queen, an enormous grower, has been variously described, but no better than as follows:—This magnificent new melon from the West Indies was first brought prominently before the public in 1881. The skin is beautifully striped, dark and light green, of the latter there being two shades, agreeably diversified. Their flesh is bright red, remarkably solid, luscious and sugary. In delicious flavor it surpasses the celebrated Icing. A Cuban Queen the size of a forty-five pound melon of some other variety, will weigh from sixty to sixty-five pounds, so very much heavier and solid are they. They are enormously productive, yielding heavier crops than any other variety we have ever grown. The vines are very strong, healthy and vigorous in growth, they ripen early, maturing fine large melons, even in Canada, and suited for all sections; their enormous size, handsome appearance, thin rind, red flesh and delicious taste, are so captivating that they bring extra prices wherever put on sale.

Celery.

Dr. Sturtevant, at the New York Experiment Station, found that, averaging the results obtained in seventeen samples in which the varieties from the two rows are separately noted, omitting fractions, plants grown under level culture averaged 177 pounds per hundred plants, while those under trench culture averaged 178 pounds per hundred plants. The length of the bleached stems was rather greater and the suckers were rather more numerous upon the plants grown in the trenches; but, on the other hand, the bases of the stems were more often split and deformed than occurred in the plants grown upon the level. It appears therefore from this trial that the trench culture yielded no advantage for the increased labor involved.

The Onion Fly.

This insect is becoming very destructive in some sections. The cuts herewith represent two species. The insect in Fig. 1 attacks the roots of the onion, the figure also showing an onion bulb with the pupa in the centre; Fig. 2 is the cut of another onion fly, the maggot also

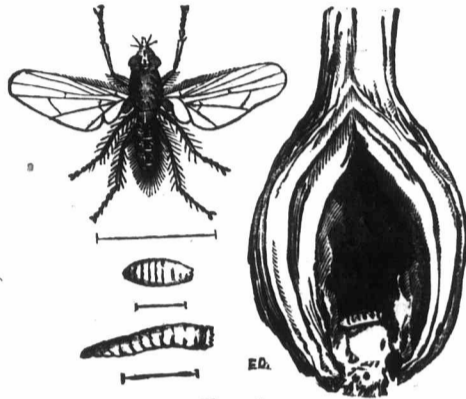


FIG. 1.

feeding on the roots, but some flies of this species feed on the leaves, and afterwards on the fruit of the cherry. The larvae are also shown in the cuts; the straight lines represent the natural size of the insects.

When the onions are small, the insect moves from one bulb to another. The top of the infected onion turns yellow, and when this is observed, the best remedy is to destroy these

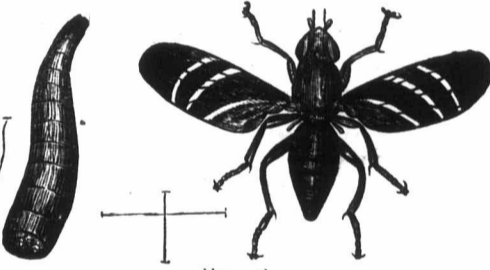


FIG. 2.

onions by burning and replace them by sound ones. When eggs are laid on the base of the leaves, the maggot will work into the heart of the bulb.

A good remedy and preventative is to apply hot water or hot soap suds to the bulbs. If the weather is dry, a good sprinkling of dry salt is also effectual.

In Sweden tree culture is taught in the public schools, and every school is required to have a certain acreage for the planting of flowering plants, shrubs and trees by the pupils. When leaving school, they are allowed to take up all the trees they planted, for the purpose of ornamenting their homes, and the same course is pursued by every generation of children in endless succession. The learning of forestry is thus made pleasant and practical, instead of poring over dry books in the school house.

The maple borer is a moth, the larva of which closely resembles that of the peach borer, and is very destructive in some parts of the country. The insect lives during the winter in its larval stage just underneath the bark of the tree. The chrysalis form is assumed early in June, and before the middle of the month they may be seen protruding from the tree. If not killed in this stage, the insect will mature and escape, after which there is no remedy.

Editor's Diary.

In putting manure on land for onion sets, see that it is well rotted, and do not manure too heavily. Sow seeds early, after making the land fine. The secret of good onion growing is fine tilth.

The seed potato war is not yet ended. Some authorities think that potatoes required for seed should be planted late, the second crop, if possible. It is said that late potatoes will not incline to sprout before spring. Every farmer can easily try the experiment.

The value of the grain crops of Ontario in 1883 was over \$26,000,000 less than in 1882. Against this place the increased value of the real and personal property of the farmers, amounting to \$78,600,000, and it will be found that the doleful wail of poverty emanating from the farmers deserves no sympathy.

The best food for early chickens is cooked meal, and for a change may get bread crumbs and hard boiled eggs finely chopped. They should be fed several times a day for the first month or two, after which wheat makes the best food. Do not let them suffer from sudden changes of temperature.

The most injurious of all the systems of hauling manure practiced by farmers is in leaving it exposed during the winter and then hauling it into heaps on the field in the spring. In a wet season manure treated in this manner is not worth the trouble spent on it, except perhaps so far as it may influence the mechanical texture of the soil.

It is estimated that the average loss in England since 1880, due to foot-and-mouth disease, amounts to \$5,000,000 per annum, exclusive of fees for veterinary attendance. The number of animals attacked in 1883 was over 200,000, nearly as many as in the four preceding years. The prospects for a remedy against the ravages of this disease are not increasing.

In the annual report published by the Minister of Agriculture, Mr. Pope states that the highest averages of wheat on the continent are reported from Manitoba and the North-west Territory. He predicts the bright prospects of this region as a pork-producing centre, on account of the facility with which peas, barley and potatoes are raised.

A Massachusetts farmer has been experimenting on feeding ensilage and hay to his cows, and found that from 40 to 50 lbs. of ensilage, with 6lbs. of meadow hay per head per day, kept them in excellent condition all winter. When the milking season arrived he found it profitable to feed some meal in addition to the above ration.

Mixtures composed of different chemical fertilizers are frequently sold for special crops. They are generally based upon the chemical composition of the plant which they are intended to nourish. These mixtures should be regarded as catch traps induced for the purpose of making sales; for the manure required depends more upon the character and composition of the soil, and the nature of the climate, than upon the composition of the mixture.

The wages of farm laborers are always affected by a general depression in business. This is natural, for the thousands of mechanics thrown out of employment are brought into competition with them. The state of affairs in Canada is always in sympathy with that of our neighbors. The average monthly wages paid in the New England States during the depression in 1879 was \$13, against \$16 in 1882, when labor and business were in their normal condition. Last year wages were again on the decline, and the depression is likely to continue throughout this year.

Now collect all the bones about the farm. Place them in strong boxes or barrels, with alternate layers of ashes, first breaking the large bones. Keep the mass wet, and in a few months you will have a fertilizer more valuable than the most expensive superphosphate. It is folly to use superphosphate at all, for being soluble it readily reverts to the soluble state in the soil. The partly soluble form is more valuable for plant food, but when bones can be finely pulverized or reduced by ashes, no farmer should run the risk of being defrauded with adulterated superphosphate. A bushel of bone ashes, when judiciously used, may be worth over two tons of farm-yard manure; and with a supply of nitrogen makes a complete fertilizer.

The great loss sustained by keeping cows on poor pastures can scarcely be estimated, especially when they have to drink from stagnant pools. Something can't be got from nothing. The food of support must first be obtained before the cow can give any milk at all, and all the profits consist in the quantity of food she eats over and above that required for maintenance. If she has to wander over a large range of pasture, especially in the hot sun and when the flies are troublesome, the food consumed in producing this mechanical work would otherwise have been used in the production of butter. Hence the necessity for rich pastures and plenty of shade trees. Always remember that, under a proper system of feeding, the more an animal eats, the greater will be the profits.

Last year the immigration to Canada reached the largest dimensions ever yet attained, and the tide which a few years ago flowed into the United States has been considerably checked. Preparations for the encouragement of emigration from Britain and the continent have already begun, and the movement is likely to be on a larger scale than ever before. There will be room in Manitoba and the North-West for all the surplus population of Europe for half a century to come, and as transportation facilities become cheapened and improved, the rate of increase of our population will keep pace proportionably. When the country fell into the hands of the Dominion about thirteen years ago, there were but a few scattered settlers; now the country contains upwards of 250,000 inhabitants. What the country wants is able-bodied farmers, and for them there is a bright future. The farmers of Ontario and the other provinces are also greatly in need of farm laborers. The right class of immigrants can obtain higher wages in Canada than in any other part of this continent, and they still have the same opportunities of rising to wealth and influence as the pioneer of half a century ago.

Correspondence.

NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post-Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. If an answer is specially requested by mail, a stamp must be enclosed. Unless of general interest, no questions will be answered through the ADVOCATE, as our space is very limited. 3. Do not expect anonymous communications to be noticed. 4. Matter for publication should be marked "Printers' MS." on the cover, the ends being open, in which case the postage will only be 1c. per 4 ounces. Non-subscribers should not expect their communications to be noticed.

We do not hold ourselves responsible for the views of correspondents.

SIR,—Is salt injurious to pigs? Many people here say so without being able to assign any reason. I should like to know how it affects them.

DELRORAINE, MAN. G. F. T.
[Small quantities of salt are necessary for keeping the blood in a healthy condition; too much acts as a stimulant to the coats of the stomach and alimentary canal, causing secretion to be too active, and inflammation of the mucous membrane. All foods contain more or less salt, but small quantities in the mineral state may be given with advantage. Having more fat than other domestic animals, hogs require a less percentage of salt.]

SIR,—The package of flower seeds which you sent me I received a few days ago, and am very much pleased with them, being a much better collection than I expected. I will endeavor to send you a few more names. If farmers knew the value of your magazine to both ladies and gentlemen on the farm, they would not grudge the little dollar yearly for so much knowledge to their benefit.

VANLERS HILL. L. B. M.
SIR,—In your March issue you recommended W. W. to sow right on the plowed land without a previous harrowing. Does this apply to wheat, and is it the most usual and satisfactory method?

MILLFORD, MAN. C. O. S.
[If the land was sod broken by a good plowman, the furrow-slices will be even and turned compactly over, in which case the wheat, if sown on the unplowed land, will be of a tolerably uniform depth. Sowing before harrowing would then be advisable, as the seed would have a bed somewhat similar to that made by sowing with the drill on old land. If, however, the land is rough and irregular, it would be better to smoothen it first with the harrow. Consider that wheat requires a moderately firm bed with uniform depth, so as to promote uniform germination and growth; then use your judgment as to the best method of spring tillage.]

SIR,—Under the heading of "Methods of Separating Cream," I notice in your April number what must be an error. You state that an average cow will give about 4,500 pounds of milk each season. This is all right as an average, but you go on to say that this quantity of milk by the old pan system will produce 60 pounds of butter. From considerable experience I am prepared to say it will yield about 180 pounds, and by the ice plan 188 pounds, but by the De Laval Cream Separator System the yield will be increased to 225 pounds. Taking your price of 20 cents per pound, (which is very low for choice butter), this will show a difference of \$9 and \$7.40 per cow in favor of the latter system without taking into consideration the advantages of having pure sweet skim milk for either cheese making or feeding purposes within an hour of the time the milk comes from the cow.

MONTRÉAL. F. W.
[Your cows show a much higher percentage of butter than that in the experiments we have taken. Your experience corroborates these experiments—with a slight variation in favor of the centrifugal separator. You will observe that our figures state percentage of cream instead of butter, which, if figured on the latter basis, would represent your interpretation.]

SIR,—THE ADVOCATE is just the very identical paper that every farmer should take, and don't you forget it.

WATERDOWN, ONT. T. R.
SIR,—Will you kindly inform me what I will do with my young orchard? It has been planted about 9 years, and about every 5th tree has about 100 raised in some trees about 1 ft. high. How will I destroy those ants and not injure the trees?

ANCASTER. SUBSCRIBER.
[Various remedies have been tried, but we think the most effectual one is a strong solution of soft soap in boiling water. Salt has also proved effectual. Please send us an account of the experiment.]

SIR,—1. We have a very good pedigree Shorthorn bull, and as it is expensive to get him changed, how would it do to let him serve his own daughters next season? Our cows are grade Durhams from Montana stock. 2. If a pedigree bull is badly stunted through ill-treatment and neglect, how would it affect his offspring?

BATTLEFORD, N. W. T. M.
[1. You will be safe in letting him serve his daughters. The best stock has been produced by in-breeding. The best breeders now breed from the best stock regardless of affinity; but in such cases care should be taken that the bull and cow do not possess the same defects or in fact any prominent physical defects or hereditary taint. 2. If a pedigree bull is temporarily stunted, his offspring will not be affected thereby; but if neglect or ill-treatment be continued for many generations, the breed will degenerate. Cruel treatment would be apt to have an injurious influence upon his direct stock.]

SIR,—Last year I planted Hebron potatoes, and in the same field Early Ohio potatoes, and I believe the Hebrons were mixed in the tubers with the Ohio—the rows nearest the Ohio rows plainly so. I am told this could not be so, as they could only mix through the seed. How is it?

HAMILTON. R. R. G.
[Potatoes can only be hybridized through the seed, not from the tubers.]

SIR,—Please inform me through your valuable paper: 1. At what time should bees be transferred from the box hive to the frame? 2. Is it more profitable to produce comb honey or extracted? 3. How many times can bees be divided with safety, in a summer? 4. How can I feed a swarm that is weak, with safety from robbery? 5. How much surplus honey should a strong colony produce in a season? 6. Please name what you consider to be the best bee journal for beginners?

BADFORD, QUE. A SUBSCRIBER.
[1. During the early part of fruit bloom; choose a warm day without wind. 2. Extracted honey. 3. A good strong colony of Italians may be once divided, and each part then once again by an expert, if the season be good and the first division be made early. 4. By using a "Shuck's" feeder at the entrance, or by feeding from above the cluster, under the quilt. 5. The average is 100 lbs. although with an increase of one swarm 200 are not uncommon; but if it yield a larger increase the honey gathered will be proportionately less. 6. "Gleanings in Bee Culture," by A. D. Root, is the best journal. The best book is "Bees and Honey," by Thos. G. Newman. In order to understand a journal thoroughly, you must first read a systematic work.]

SIR,—1. How much boiled flax seed would be sufficient to feed a mare with foal, and how often? 2. Is there any such thing as black teeth in young pigs? 3. Should wolf teeth in horses be pulled out, or would it do as well to break them off? If so, would the remaining roots affect the horse the same as the whole tooth? 4. Is the disease in spring calves called "black quarter" the same as "black foot"? Is there any cure, or would the following recipe be of any use? 1 pint salt, 1 tablespoonful saltpetre, 2 tablespoonfuls black antimony and 1 lb. of sulphur in a trough? 5. How would the following articles be mixed together for a condition powder: sulphur, saltpetre, ginger, baking soda and ashes?

EXETER, ONT. NEW SUBSCRIBER.
[1. Flax seed fed to a mare in foal is apt to produce abortion. 2. Black teeth are known to exist in young pigs, caused by indigestion or acids in the stomach, but there is no disease known by this name. 3. Wolf teeth need not be pulled unless they interfere with mastication. Loosen them with a punch and then extract with forceps. If the fang is left it will do no harm; it will soon become absorbed. 4. "Black foot" and "black quarter" are the same. The calves die so suddenly that no cure can be affected. Your recipe is good for any calves. 5. Sulphur 4 parts, saltpetre 1 part, soda 2 parts, ashes 2 parts, and ginger 1 part. Give a good tablespoonful at night in the feed.]

SIR,—Please inform me through the ADVOCATE—1. Will coal soot mixed with stable manure, make a good fertilizer for strawberries? 2. How would it answer for common garden vegetables? 3. Would a quantity of coal soot in a compost be of much value for a top-dressing for meadow lands?

GARDNER'S CREEK, N. B. J. F. W.
[1. 2. Soot would be a valuable auxiliary to stable manure for strawberry bushes or garden vegetables, especially if the soil is deficient in vegetable matter. If vegetable mould is abundant in the soil, lime or ashes would be better and cheaper. Soot is only valuable for the nitrogen it contains, and vegetable soils already contain an excess of this element, but the nitrogen of the soot is more available as plant food. If your soil is heavy, soot would enrich it, and improve its mechanical texture. 3. Yes.]

Family Circle.

HETTY.

A STORY.

I wish the hoarse dog at Number Nine were a better sleeper.

He always seems to have something on his mind. He is not content to keep it there either, but must forever be taking the moon—when there is one—into his confidence.

He is a dog who has a keen sense of his own responsibilities, too, and feels called upon to bark at every boy who whistles as he passes, and at every dog who peeps in through the various gaps in the wooden palings of his home.

So he does a good deal of barking, take it altogether, and is looked upon by the inhabitants of Paradise-place in general as a safe and sure protection against burglars and all evil-doers.

Still, when working hard at "copy," for which I know the printer's devil will be howling at my gates in the morning, I am sorry the hoarse dog is of such a conscientious disposition.

When I say "howling at my gates," I speak metaphorically. As a matter of fact, I have no gates. As a matter of fact, I have only a share in a front door. You knock three times, and that means the little, plain-looking, shabby woman in the second floor front.

I am only a lodger, you see, in Number Eight, Paradise-place, and ours is not an aristocratic neighborhood. Yet we have an odd sight or sound that is pleasant in its way, for all that.

I really don't think I ever saw finer mignonette than grows in the window of Number Twenty, over the way; and dear me! how sweetly the perfume steals across the narrow street when the weather is still and warm.

Then there is the lark fastened outside the attic window of Number Ten. Did ever one hear such melody as he makes when they put him out first thing of a morning? He squats on the square of turf in the bottom of his cage, presses his speckled breast to the bars—and I shut my eyes, and am back in my old country home. The furrows of the freshly turned fields have a fresh, pungent smell. I hear my young brother (long since laid to rest in a far-off land) whistling as he comes home from his work, with our blue-eyed baby sister toddling along by his side, holding bravely on to one finger of his strong, sunburned hand.

The farm door stands open; the passage inside is pied with gently stirring leaf shadows from the ivy that clusters all over the old porch; and—yes—there is the mother I shall never see again, knitting in hand, peeping from the doorway at those two approaching figures—the tall, stalwart lad and the blue-eyed bit of a lassie.

These are the visions I see as I listen to the lark, and hope he doesn't mind very much being doomed to live in a small wire house and cheer up poor toilers with his song.

Yes; even Paradise-place has its pleasures. As to the stories I write—why, they are full of lords and ladies, and everything is on the most genteel scale imaginable. I take in a fashion paper to study the dress of the upper circles; though on this point I am forced to admit that the artist who "does" the illustrations is a trial to me, and often astonishes me with the look of my own creations—on paper.

I am strangely, marvelously alone in the world. The old homestead, father, mother, big brother, blue-eyed sister—all gone.

But that is not the story I am going to tell you now. Suffice for you to know that I am a lonely woman, grey-haired, sad-eyed; almost penniless, save for what a busy pen can earn; inclined to be querulous with the hoarse dog at Number Nine, but yet ready to bask in a ray of sunshine; thankful for the lark's song and the scent of the mignonette; thankful that there is work to be done, and money to be earned thereby, sufficient for my simple wants.

It seems a very small story I have to tell, but yet it had a keen interest for me at the time it happened, and I often look back upon it. I have often wondered I had the courage to do as I did, but I have never repented of what I did.

Well, just as the Spring was passing into Summer; just as the fresh green leaves of the trees in the People's Park, that lay within a stone's throw of Paradise-place, were beginning to get a bit dusty, and the primroses and violets were going out of season, a pretty sight caught my eye one morning and kept me from my work longer than it ought to have done.

It was a woman's face, framed in an open window—the very one were the mignonette box stood, and whence came the whiff of the many blossomed flowers in summer.

Just now nothing was visible in this long green box except a vast crowd of tiny two-leaved plants, that might have been baby cabbages, or cress, or anything—if one had not known they were mignonette.

The upper half of the window was shaded by a shabby sort of green blind; the lower, open, framing, as I have said before, a woman's face.

The profile was toward me first. Rather large and massive in outline, but wonderfully Madonna-like, with sleek brown hair drawn simply back and folded round a comb.

We had a pretty face or two in Paradise-place, but daintiness and neatness were not qualities among us. But this woman was exquisitely neat, and I could see the little snow-white collar round her throat.

Presently, still loitering at my window, she turned, and I saw her full face.

A broad, noble brow, disguised by nodding fringes or tangle of hair of any kind; lambent eyes, clear and steadfast; and the very sweetest smile I had ever seen before, or have ever seen since.

How did I know this? Why, because she looked across, as I did, smiling at me. That moment, out burst the lark at Number Ten into a madness of trills and roulades, and somehow the sound

seemed a sort of excuse for that silent greeting. Of course I returned the smile—nay, I am not sure I did not give the least bit in the world of a nod as well. Then I sat down to my desk, giving all my energies to the task of extricating a young and beautiful Countess out of a tangle of most trying circumstances into which I had carefully led her the previous evening.

Somehow the face at the window opposite seemed a sort of clearer stream; never had the agony of a suffering heroine piled up more thrillingly; never had the inevitable "happy ending" foreshadowed itself so delightfully.

I began to weave a romance in my own mind round that Madonna-faced woman. The Countess was safely landed on the matrimonial shore after her struggle through the waters of affliction, so I could afford to be idle a bit.

If I kept waiting for "copy," the printer's devil was apt to scandalize the neighborhood (which, though poor, was eminently respectable) by singing low songs and whistling in an impudent and distracting manner, hanging himself on to the area rails in impossible attitudes the while; but to-day his bundle of manuscripts was ready long before he appeared—a state of affairs that I am perfectly sure disappointed him extremely as curtailing his opportunities of harrying the little world of Paradise-place.

There was no more "copy" due for nearly a week. I would be idle for a while; I would stroll into that park of which we were all so proud, sit on a seat under a tree and watch the shabby children turning somersaults and standing on their heads in the grass; take a glance at the rhododendrons beginning to break out into a blaze of color; watch the laburnum shaking its golden locks out in the soft, warm wind; meditate on future difficulties into which to lead aristocratic feet, future depths of unspeakable bliss upon which to let the curtain drop.

A single chop and a rice-pudding in a breakfast saucer for your dinner are simple fare, but they do not preclude the needy author from telling of magnificent banquets and festivities in dazzling halls of light. In the same way the homely and occasionally sordid details of my daily life in no way clipped the wings of my imaginings, and these flights of fancy always seemed to have fuller scope in the open air, when green boughs waved in slow and stately fashion between me and the blue sky beyond.

Yes, I would go commune with nature, first ordering the chop and pudding to be ready an hour hence.

I would weave an intricate and exciting plot—a plot that would hold my reader breathless, and cause my editor to greet me, on my next visit to the editorial sanctum, with his blandest smile; and my heroine should be limned after the pattern of that sweet-faced, calm-eyed woman, my new neighbor.

I had chosen a delightful seat, quiet and retired, yet within earshot of children's voices and the quacking of many ducks, (for we had a pond—quite a large pond, too—in our park), when, moving slowly, and in strange timid fashion, my new neighbor came along one of the side walks.

I confess to experiencing a shock. I confess that Pegasus, just about to soar aloft, floundered pitifully.

The Madonna-faced woman was what is called, in homely parlance, a crook-back.

A simple brown bonnet was tied over her brown hair, the two nearly matching each other. Her blue eyes—wonderful eyes they were in very truth—full of a sort of pathetic pleading, as if asking all the world to be tolerant of her deformed shape and awkward, shambling gait—looked at me as she passed. I almost fancy she would have stopped and taken a place upon the bench beside me but for the fact that she was on her way to keep an appointment. I came to this conclusion unhesitatingly, because I have learned to read people's errands from the way they go about them, and know the look of a person on the way to a business interview off by heart.

Poor people do not wait for introductions to make each other's acquaintance. It is one of the advantages of poverty that it is untrammeled by conventionality.

A week later I knew Hetty Deacon to speak to as we passed each other in the street; to nod to as we looked at each other from opposite windows. A month later I seemed to have known her all my life. I wondered how I had ever managed to get on without her sweet companionship—her ready sympathy.

For you never saw any one so interested in the beautiful young Countesses and wicked young Dukes as Hetty was! She would laugh right merrily over the funny bits of my stories, and I'm sure I have seen her eyes quite bright and tearful over my death-bed scenes. You know people always die at great length, and very much more picturesquely, on paper than they do in real life, and I was a great hand at this sort of thing. I am a very old woman now, and an unexpected legacy has made it quite unnecessary for me to write "fiction for the million," as we called our weekly paper, so I may say that much without laying myself open to the charge of being vain-glorious.

Yes, I was a good hand at the pathetic parts. I often brought the tears to my own eyes, and my voice quite faltered as I read aloud to Hetty about pale faces on white pillows, and wan hands that clasped those that fain would never let them go.

"How clever you are!" she would say; "I should never have thought of that."

Success I had had in a certain small way of my own; success that meant a due and regular supply of chops and pudding, and a cheap trip to the sea once every autumn; but this, I felt, was fame—this was incense—this was a sip out of the intoxicating cup of glory!

It was such a help to me having some one near at hand to take an interest in the webs I spun with my busy brain.

Some while back I had tried the landlady's daughter; but the attempt was a failure. She ate surreptitious sweets while I read to her, and made nasty sucking noises over them. I caught her once, in the most thrilling part of a most thrilling story, making vulgar signs with her fingers to her younger brother through the

chink of the room door. Then I gave the thing up, convinced that the higher education of the masses was a hopeless affair. But it was different, quite different, with Hetty.

And I grew to love the girl (she was but eighteen) with all my heart. There had been black and terrible troubles in my past life. All I loved had been reft from my hold; worse still, those I trusted in most blindly had proved untrue. Mine was a sad story enough; grief and disappointment had seemed to wither me; I had made no ties, formed no friendships in these latter years. But now, I was like an old tree that suddenly sprouts out into little fresh green branches of leaves all about; its hoary trunk. I let Hetty creep into my heart of hearts and nestle there.

Hetty was an artist's model.

"I only sit for the face and head, of course," she said, a faint flush rising in her cheek, as she alluded to her deformed and twisted frame; "it seems I suit for Saint Cecilia, and that sort of thing."

"So I should fancy," I answered, glancing at the beautifully spiritual face opposite to me, "it is a good thing to have at hand when studio work chances to be slack. I was getting very hopeless just when first we came here, though I said nothing to mother. I never do. Do you remember the morning I passed you sitting under the laburnum tree in the park? Well, I was on my way to see an artist then."

"I knew you were on your way to see somebody; you looked like business all over."

"Yes, I dare say I did. I felt like it. I never made a better bargain than I did that day. I was afraid that I should break out singing as I came along the streets home—my heart was as glad as the lark over there at Number Ten."

"I thought so," I put in here; I heard you singing next morning at your work."

"Patience, I think we always loved each other, even before we ever spoke to each other. I used to peep at you across the street, and then, the milkwoman told mother you were 'the lady who wrote stories,' so I peeped oftener than ever. I think I was a little frightened of you at first."

"But not now?"

"Ah, no!"

Hetty's mother was nearly blind, and yet it was wonderful how much she managed to do in the way of "settling up" their shabby little room. It was the very picture of cleanliness and tidiness. The last tenant had been a musician at one of the minor theatres, a man who devoted himself to two things in life—his violin, and the rearing of mignonette in the box outside the window. The sun of prosperity seemed to be beginning to shine upon him, for when he left, with much pomp and ceremony, he presented the painted box to the landlady, and now, full of sweet-scented greenish and yellow flowers, it flourished exceedingly under Hetty's care.

"Cousin Jack likes the smell of flowers like those," she said to me one Sunday afternoon as she and I stood together by the window. "He's coming, is Jack, this evening, and he and I are going to church together."

I am naturally rather a fluent woman, but there was something in Hetty's face—something in Hetty's voice—that held me silent, as she spoke of this expected visitor of hers.

If you have any intuitive perceptions at all, you can scarcely mistake the look in a woman's eyes, the smile on a woman's lips, as she speaks of the man she loves.

Apparently Hetty was surprised at my silence, for she gave me a quick glance, folded her hands lightly one in the other, let them fall upon her lap, and with a sort of child-like wonder in her great soft eyes, said slowly:

"Why, Patience, you never saw Cousin Jack?"

I read her heart like an open book. She pined with all her gentle soul that benighted being who had "never seen Cousin Jack." It was difficult to her to form an idea of what the world must seem like to that person whose world did not contain Cousin Jack.

"No, I have never seen him, Hetty. May I see him tonight, dear? Will your mother give me a cup of tea, and then I can sit with her while you and Jack are at church."

So it was settled like that. We carried over my nice fresh bunch of watercresses and my glass bee-hive full of marmalade, and made a sort of joint feast of it.

"He's a bonnie lad is Jack," said Mrs. Deacon before he came. "He's a sailor, you know—getting on well, too—in the merchant service. Never a voyage he comes home from but he brings me some pretty gift or another; nor he don't forget Hetty, neither. Why should he, indeed? He used to carry her about when he was a strong chap of ten years old, and she a bit weakly-like lass of five. He was handy, too, and made a go-cart—aye, that did he. 'She shall ride in her carriage like a queen!' he'd say, laughing, so as you might hear him a mile off. My poor husband was alive then, and we were well-to-do."

Here Hetty, ever watchful of her mother's moods and fancies, cried out that Jack was coming down the street, and that he had a posy in his coat. So he had; and I hardly know which was brighter and more bonnie, the young fellow's face or the posy of Summer flowers at his breast.

He was a sailor, every inch of him, strongly built, sun-burned, curly-locked, dark-eyed. He had a ringing happy laugh and was fond of watercresses and marmalade; indeed, he complimented me on both articles, Mrs. Deacon having explained that they were my contributions to the entertainment.

But what struck me about him most was his marvelously tender, gentle ways to his cousin Hetty. She, on her part, seemed more silent than usual; but the beautiful Madonna face was all alight with a quiet radiance—a calm and restful joy—a look as if she were forever saying to herself, "he is here, here beside me," like a bird singing a sweet song of content over and over again.

[TO BE CONTINUED.]

The *Nepenthes Hookeriana*

Is the name given to a curious specimen of the pitcher plant, of which we give an illustration. The name pitcher plant is a general one given to plants with leaves wholly or partially transformed into receptacles for water. This occurs in plants widely separated botanically. The most striking of all the pitcher plants are furnished by the genus *Nepenthes*. They are inhabitants of tropical swamps in India, Australia, etc., etc., and now number over 30 varieties. The water found in some of the *ascidia*, as the pitchers are botanically termed, may have been collected from rains, but in others the mouth of the pitcher is so protected that it is impossible for the water to have been derived from this source. These wonderful plants have been erroneously said to secrete water for use of travellers in arid regions where no other supply exists, but the fact is that the plants are only to be found in swamps, and cannot endure a dry atmosphere. The Australian pitcher plant, the subject of our engraving, has a very short stem, bearing ordinary leaves of an oblong form. The pitchers or flowers, which are not showy, are borne on a long spike, are from one to three inches long, and in a well grown plant they are arranged in a close circular tuft, and in color are green spotted and shaded with purple or brown.

Baby-Kissing.

We know a mother who positively refuses to let any one kiss her baby in her presence, and has given strict orders to her nurse not to allow it to be kissed when she takes it out for its daily airing. "I wonder if Mrs. B. thinks her baby is any better than our babies," and "Mrs. B. need not be so afraid that everybody wants to kiss her young one; it is not so pretty," are some of the complimentary remarks made by certain female friends who have offered a kiss and been refused; but we think that Mrs. B. is to be commended for her wisdom, and that it would be a good thing if all mothers were equally as nice and prudent.

This habit of baby-kissing is full of hypocrisy any way; nobody really cares to kiss a baby except its mother and own home folks, and, besides being hypocritical and foolish, the custom is often the cause of disease. People with sore throats and fever blisters on their lips are just as ready to "kiss the baby" as though their breath were as sweet and pure as the baby's own. In fact, the sore-mouthed and the people who suffer from chronic cold in the head, are often readier to bestow a hearty kiss on the babies of their acquaintance than the really kissable people, who, by the way, are as one to ten of the un-kissable.

It is bad enough for girls and grown women to indulge in the habit of kissing each other on all occasions: so do let us spare our helpless babies the disagreeable and dangerous infliction, even if we are to paste an ugly strip of sticking plaster over their pretty mouths whenever we see a chronic kisser coming our way.—[New Orleans Picayune.

Winnie May's Department.

MY DEAR NIECES.—It is my desire this month to say a few words about *gossiping*, by which there is wrought a never-failing amount of evil. Many would be horrified if accused of being gossips; but stop and consider for a moment. We can all do great harm, perhaps quite unconsciously, by listening to some idle tale, and then "just mentioning" it to our dearest friend, giving credit to the story by the expressions of the face and the intonations of the voice; straightway the one who hears tells again to some one else, with additions, slight, perhaps, but material. So the story increases, looking more serious each time, until it becomes a settled fact in the minds of the public. This may perhaps be prompted by mere love of fun, as half the gossip in the social world is of the unthinking kind, indulged in merely from a

dear girls, as the heartless murderer of character—the foe to humanity. Remember that "a judicious silence is better than truth spoken without charity." Make it a principle of your lives never to speak ill of anyone; then, if an erring neighbor goes down, you cannot blame yourself for assisting in the downfall.

MINNIE MAY.

The prize essay on "The Sunshine and Shadows of Life" will be found on next page. Over twenty very excellent essays were received, and it was not an easy matter to come to a fair conclusion, but I think you will all join with me in congratulating Miss Jessie Robertson, to whom we have decided to award the prize.

Next month a beautiful silver napkin ring, with the owner's initials engraved, will be given for the best essay on the subject, "Woman's Influence."

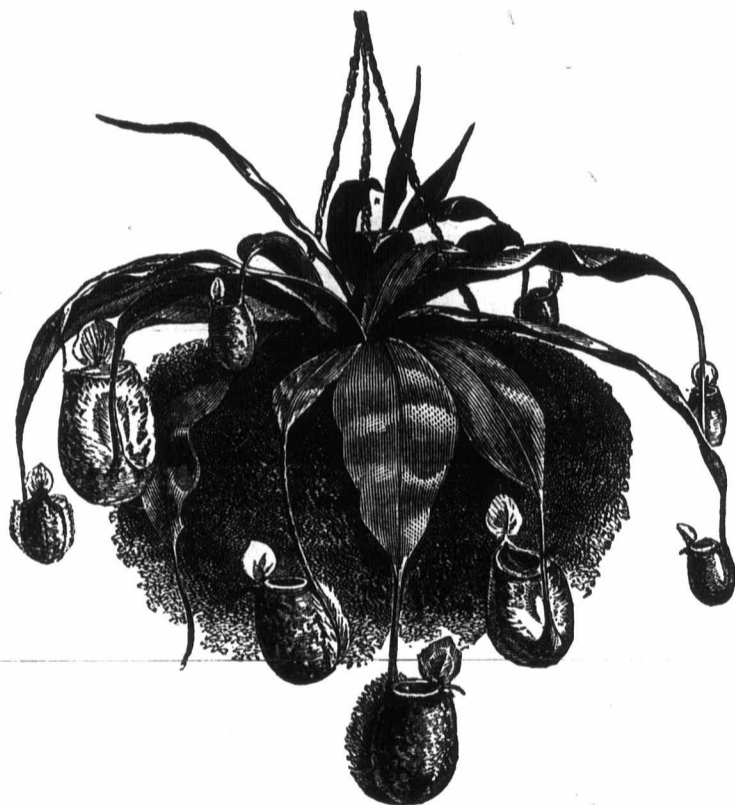
Answers to Inquirers.

G. I. E.—It is rather a difficult matter to describe "crazy patchwork," as there is no definite rule for making, but we may be able to give a few hints. It requires a person with patience, ingenuity, and taste in blending colors, to make it a success. No two pieces are exactly alike, each varying in shape, size or color from the others. The first thing necessary is to have a piece of unbleached cotton, not too heavy, the size of the article you wish to make, on which baste the pieces of silk, satin and velvet, turning in the rough edges. The size of pieces used depends upon the article; if or a bed-spread they should average from two and a half to three and a half inches, but for a sofa cushion they must be smaller to look well; while pieces of one or one and a half inches in size make very pretty toilet cushions, brackets and tidies. One important thing is to have as great a variety of shapes as possible, which are obtained not only by cutting the silk in odd shapes, but also by

laying one partially over another, as a point of one color over some portion of another color, etc. Do not be afraid to use plenty of white and very light shades, as they tone down the very bright colors and give character to the darker ones. When the pieces are basted on, work all seams with gold-colored silk, either in herring-bone or feather-stitch, and if desired embroider pretty designs on the plain silks, or some border all around the pieces with nice contrasting silks.

G. T.—1. It is quite correct for a gentleman to offer his arm to a lady when taking a walk in the evening, but it remains with the lady to accept or not. 2. When introduced to a lady a bow is sufficient, unless you see that the lady is offering her hand, in which case you should immediately give yours.

D. S.—The poem beginning—
"In an old New England kitchen,"
is by Eugene J. Hall; we will give it in our columns as soon as space will allow.



NEPENTHES HOOKERIANA.

W. J. STEVENSON.—Many thanks for the poem.

FARMER BOY.—I have been waiting on a lady for the last two months. There was a party at a neighbor's house, but, the roads being very bad, I did not go and tell her anything about it till that night, when I went, and found her engaged to go with another young man to the same party. Should I ever call on her again? and what should I tell her? The lady gave you no cause of offence. Some country lads seem to fancy that if they pay a little civil attention to a girl she should not look at any one else, which is very selfish and unreasonable, and we must repeat that until a girl is engaged, she is at liberty to accept the attentions of any young man of her circle according to the customs of the place; and any young man who may presume to control her actions while not avowing his own intentions, should be treated with the coolness which such audacity deserves. No girl should consider herself responsible to anyone, except her parents, until she is engaged; after that she should show every respect for the feelings of her betrothed.

LUCINDA.—1. Nothing is prettier or more suitable for a picnic dress than a neatly made light print or muslin, either of which is cool, and can be put into the wash tub afterwards if soiled, which is invariably the case. 2. Certainly the same would not be suitable for a party dress. We should advise either a pretty white dress, or a nun's veiling, light blue, pink or cream color, either of which ought to suit your complexion. Make the skirt full, and trim with narrow box-pleating or ruffles; if the latter, edge with lace. Let the overskirt be long, and loosely draped and pleated full into the band, trimmed with lace and long loops of satin ribbon at the sides. Then make either a basque-waist trimmed handsomely with lace, and satin bows down the front; or if for a young girl, have a yoke-waist with a rather wide satin belt and long bows and ends on one side.

MADGE AND KATE.—1. It would be perfectly proper for a girl of fifteen to spend the evening with older members of her family if at the house of a very intimate friend, provided only a few are to be present and there are young people in the family; but certainly you are too young to attend large parties, except those gotten up for children of your own age. 2. We think a miss of seventeen should wear her dresses the ordinary walking length.

A YOUNG HOUSEKEEPER.—1. We do not know whether concentrated lye in such small quantities as you mention will injure the clothes or not, but would be afraid to make a practice of it. A little "Pearline" or "Non Such" in the water is excellent, and is considered perfectly safe for white clothes, but for flannels and colored things we recommend the good old fashioned soap and water. 2. Soda is an alkali, cream of tartar an acid which works on the soda; so when sour milk is used the cream of tartar is omitted as the acid of the sour milk is sufficient. Baking powder is pure and unadulterated soda and cream of tartar mixed in the proper proportions for use.

Mike: "It's the Irish that does all the inventing in these days, sure" Jonathan: "Irish be hanged! The Irish don't invent anything to speak of. Americans invent everything." Mike: "Thin perhaps yez can tell me why the Irishman's name, Pat, is always next to the date on all new inventions. Not an American name can you find on one, at all, at all."

Recipes.

FISH BAKED IN CREAM.—Boil the fish until the flesh will come from the bones; not more than ten minutes after it begins to boil, flake it and put a layer in a buttered dish; sprinkle over it a little salt, pepper and sage, and so on until the fish is used up; then take the dressing, which was made while the fish was boiling (dressing to be made of 1 pint of milk, 1 heaping tablespoon of flour, and butter the size of a small egg, pepper and salt; stir over the fire to thicken); pour this over the fish; then roll two or three crackers and put on the top; bake half an hour in a quick oven.

EGG TOAST.—Beat 4 eggs, yolks and whites, together thoroughly; put two tablespoonfuls of butter into a saucepan and melt slowly; then pour in the eggs, and heat without boiling over a slow fire, stirring constantly; add a little salt, and, when hot, spread on slices of nicely browned toast and serve at once.

FRIED PATTIES.—Mince a little cold meat and ham, allowing one-third ham to two-thirds meat, and an egg boiled hard and chopped, and a seasoning of pounded mace, salt, pepper and lemon peel; moisten with a little gravy or cream. Make a good puff paste, rolled rather thin, and cut into round or square pieces; put the mince between two of them, pinch in the edges to keep in the gravy, and fry a light brown. They may also be baked in patty-pans; in which they should be brushed over with the yolk of an egg before they are put into the oven. To make a variety, oysters may be substituted for the ham. Fry the patties for about fifteen minutes.

A DELICIOUS DESSERT.—Take three quarters of a pound of prunes, stew, and sweeten to taste. When thoroughly cold add the whites of four eggs, beaten to a stiff froth. Stir all together until light, and put in a dish and bake about twenty minutes. When cold cover with good cream and serve.

SNOW PUDDINGS.—Six eggs, six tablespoonfuls corn starch, not very heaping; a little salt; one tablespoonful of sugar, and the juice of one lemon; dissolve the corn starch in a little cold water, and turn 1 quart of boiling water upon it; add the salt, sugar and juice of lemon, then add the whites of the eggs beaten to a stiff froth, and stir well; set in a basin of boiling water and scald ten minutes, turn into a mould and set away to harden; scald 1½ pints of milk, add the yolks of eggs beaten light, and sugar enough to make pretty sweet, and stir until it begins to thicken, add a little salt and flavor to taste; turn the snow out of the mould into a glass dish, and pour the cream around it.

FRENCH CREAM CAKE.—Three eggs, 1 cup of granulated sugar, 1½ cups flour, 2 tablespoonfuls of cold water, 1 teaspoon of baking powder. This is enough for two cakes baked in pie-pans, to be split while warm, spreading the hot custard between them; or for four cakes baked in jelly-pans, with the hot custard spread between them, the latter being a preferable plan. For custard, boil nearly 1 pint sweet milk, mix 2 tablespoonfuls corn starch with ¼ cup sweet milk, add 2 well-beaten eggs; when the milk has boiled, add nearly 1 cup sugar, and stir in slowly the corn starch and eggs; add ¼ cup butter stirred until dissolved, flavor with one teaspoon vanilla, and spread between the cakes while hot. This cake can be used as a pudding by pouring over each piece a spoonful of the custard that is left.

PRIZE ESSAY.

BY JESSIE ROBERTSON, STRABANE, ONT.

The Sunshine and Shadows of Life.

"Shadows dark and sunlight sheen
Alternate come and go."

So wrote America's summer poet in words true as they are musical. Beautifully true in the natural sense, we find them also true when applied to life.

It must be a dead soul indeed—dead to all things lovely—that has not noticed the bright sunshine gladdening hill and dale; glinting the crest of the tiny waves of some little stream or inland lake, and causing the ripening grain of a rich harvest to assume that golden brown only describable by pen inspired of poetic genius; ever and anon a dark shade overcasting all, caused by some light fleecy cloud passing between sun and earth, not lessening the beauty, however. Away to the horizon where the shadow rests, is a back-ground of rich green foliage, blending harmoniously with the deep blue of the sky, and lighter green of sunshine in front.

When children, we have watched the alternating sunshine and shadow with much interest. Stretching as far as our childish vision would reach, the dark line could be seen hastening towards us; in our childish innocence, laughing as only children can, we have more than once ran to see how far we could go before it could catch us, happily unconscious that we were playing a part which would have to be acted with intense earnestness as we grew to maturer years.

But the scenes of childhood are gone, leaving only tender memories. All around us are still fitting those alternations of light and shade which characterize the world of nature. Whence come they in life? We would draw aside the curtain and ascertain their origin. In this enquiry nature will help us wonderfully. We will require much of her assistance, for there is a peculiar similarity between the natural and temporal; nothing occurs in the latter, but some phase of the former can be taken as illustrative of it.

Many homes are darkened by shadows—we might say every home. Perhaps this shadow is caused by a father unworthy the name, an untrue mother, an erring son, or a wayward daughter; perhaps a cloud has fallen over it by reason of financial reverses, social temptations, bitter disappointment, false friendship, or physical weakness; be the cause what it may the shadow is certainly there. If any one doubts it, let him become a closer observer of human nature. Why so many anxious, care-worn faces in the world around us? The deepening furrows whisper the story, "Life's Shadows." It is true, indeed, that as in the natural world, there may be days and weeks of unclouded sunshine, but eventually the shadow will come. In the strange dispensation of Providence there seem to be some homes and some lives whose normal condition is shadow—sunlight the exception. And this is not always the fault of the home or the individual. Superior mould often has to live in the same condition of life externally as common clay. Sensitive, delicate, honorable natures often have to come in close and personal contact

with that which is rude, harsh and mean, and why? On the same principle that sunshine and shadow exist. Does the thought often occur that it is the sunshine which causes the shadow? Had the former not been the latter could not be; had the latter not been we could never have fully appreciated the beauty of the former.

But we have only examined the matter as the world views it—externally and materially. Let us now throw around it the soft radiance of spiritual sunlight. It is true, indeed, that in the spiritual world, as in the natural, there are "shadows dark and sunlight sheen." If not, whence these longings unutterable, indescribable—for something higher, nobler and purer? Whence these unsatisfied yearnings? Whence the gloom and doubt and darkness that at times almost make us question the grand plan of creation and redemption? Whence, too, that sweet companionship of kindred spirits, those seasons of spiritual exultancy which seem an earnest of eternal bliss, that radiance of soul which alone can come from the Father of light?

But to return to the subject proper. Be the shadows light as the snowy cloud that occasionally intervenes between earth and sky, or as the summer storm-cloud which, having spent its fury, passes away, leaving a clarified atmosphere and a heaven of purer blue, or be they as the deep, gloomy, portentous dullness of a winter's day, there may also be found the glorious sunshine. Where and how is this to be found?

We may find it in ourselves, and yet not in ourselves. In ourselves because we must make the effort to bear the burdens of others, thus making more of sunshine in other lives, and by so doing turning away from ourselves. Is one discouraged and almost weary of life? A dark cloud seems to shroud all. Let one so situated seek those who are in even more leaden darkness than himself, and just in proportion as the attempt is made to lessen the burden of the more overshadowed one, will the clouds dispel, and the sunshine grow brighter. Do you doubt it? "Learn the luxury of doing good," and be convinced. Are friends untrue? Shadow deep enough, heaven knows, but there are those who are longing for sympathy. Instead of brooding over your own griefs, listen to theirs, sympathize with them, counsel if you can, and behold the sunshine! Is a mother discouraged and wearied with her thoughtless, wayward children? Heavy shadow, but let her anticipate the sunlight which will gladden her declining years, when she sees her children filling useful and honored positions in life. Is a teacher perplexed and almost giving up her effort to lead the young minds entrusted to her care to live for a noble purpose? Are the shadows drooping heavily about her? Let her remember her's is a work which will stand long after "all shadows flee away," and with this hope to comfort her, she finds in her daily work the sunshine of building for eternity. Is the earnest pastor at times wrapped in thick clouds of darkness, because of the spiritual weakness and coldness of his people? His sun-

light appears when many souls are given him for his hire, which reward will most certainly be his if he only prove himself faithful and true. Of all vocations the holy calling seems to be peculiarly one of alternating light and shade. As spiritual gloom is the most intense, so spiritual light is the most radiant—the clouding or dismantling of the effulgence of the Sun of Righteousness. These are but instances of what is true in every case—the secret of life's sunshine is found in the words, "Bear ye one another's burdens."

Of course, there are times when, from physical causes, the shadow appears more ominous than it really is. A disordered stomach not unfrequently is the cause of a dark day; the incautious partaking of some article of diet will sometimes disturb the equilibrium of mind and body for a week, but we are attempting to deal with real—not imaginary—lights and shadows.

We beg to extend, ere we close, a word of sympathy to those whose lives, temporally speaking, are apparently all shadow. Care-burdened ones, have you never observed that the most glorious sunsets are those which appear at the close of a day of storm and cloud. Come and let us together look upon it! See the heavy masses of clouds breaking in the west—the darker the mass the contrast of silver-edge being all the more striking. What

And the Pansy family must have found Queen Elizabeth's wardrobe under ground; For in velvets and satins of every shade, Throughout the season they're all arrayed.

Pinks and Daisies and all the flowers Change their fashions, as we change ours; And those who knew them in olden days Are mystified by their modern ways.

Who sets the fashions, I'd like to know, For the little people under the snow? And are they busy a weary while, Dressing themselves in the latest style? —[New York Independent.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES.—I have just gone through my great pile of letters for April, credited those who sent correct answers, and selected which I considered the best puzzles for May. Now some of my children do not seem to know what is meant by original puzzles, so I will tell them they are puzzles thought of and made out of their own heads; and it is of no good of you trying to deceive me, for if I have not seen the puzzle myself, some one out of my large family likely have, and they take good care to let me know. So one who was credited for a puzzle in April No. may have occasion to feel rather guilty. But this is only to a few; the majority of you work hard and deserve a great deal of credit, and on the whole I think you are just the best nephews and nieces in the world. There were one or two errors in April puzzles, so all who attempted the answers got full credit. I have a great deal more to say to you, but space requires me to be very brief this time.

UNCLE TOM.



1—ILLUSTRATED REBUS.

a blending of color—saffron and amethyst—blue and gold—a perfect picture painted by the Divine artist on cloud-canvas; truly "the gorgeous upholstery of heaven." Behold the troubled cloud waves drift apart to allow the soft subdued rays of a setting sun to throw beauty over the landscape. As it dips beneath the horizon there is a sacred calm—a holy peace, to break which by utterance of words seems almost sacrilegious. Beautiful sunlight after a day of shadow—fitting emblem, we trust, of those whose daily lives seem to be one prolonged shadow. "And it shall come to pass that at evening time it shall be light."

Who Sets the Fashions?

Who sets the fashions, I'd like to know, For the little people beneath the snow? And are they working a weary while, To dress themselves in the latest style?

There's Mrs. Primrose, who used to be The very picture of modesty; Plain were her dresses, but now she goes With cramps and fringes and furbelows.

And even Miss Buttercup puts on airs, Because the color in vogue she wears; And as for Dandelion, dear me! A vainer creature you ne'er will see.

When Mrs. Poppy—that dreadful flirt— Was younger, she wore but one plain skirt; But now I notice, with great surprise, She's several patterns of largest size.

The Fuchsia sisters—those lovely belles! Improve their styles as the mode compels; And though everybody is loud in their praise, They ne'er depart from their modest ways.

Puzzles.

2—TRANSPOSITION.

Iuaplhrtm rhea htat ll'fist eth ysk Nweh sromts appere ot tpra I kas ton drupo lpyhophois Ot ctuae em htwa otuh tar.

ROBT. D. ROSS.

3—Syllables three I have and letters ten, Which means an assembly of learned men. My 1, 2, 9 to a gun belong. My 2, 3, 7 sometimes is strong. My 3, 2, 7 form the vernal sign. My 4, 8, 9, 10 prove a fasting time. My 5, 9, 8, 1, 10 show useless trifling. My 6, 3, 8, 9, 2 to end strfe in. My 7, 2, 9, 5, 6 is madness. My 8, 9, 10, 6, 5, 4 oft causes sadness. My 9, 6, 7, 8 is what I desire. My 10, 3, 5, 1 oft throws us in the mire. Each words letters will form, you'll find The word that wanted, and whose acts will bind.

LOUISA BERG.

4—SQUARE WORD.

A mountain in Europe. A river in Russia. A lively frolic. European mountain.

ANN FORBES.

5—HOUR GLASS PUZZLE.

1, Part of the German Empire; 2, one of Jacob's sons; 3, a large tub; 4, a vowel; 5, to deface; 6, a place in Central Africa; 7, island in East Indies.

W. L. SISSONS.

6—ENIGMA.

My first is in pastor, not in people. My second is in nave, but not in steeple. My third is in black, but not in white. My fourth is in dark, but not in light.

My fifth is in savage, but not in cannibal.
My sixth is not in beast, but in animal.
My seventh is in Walter, not in Fred.
My eighth is in living, not in dead,
My ninth is in dress, but not in gown.
My whole is a New Brunswick town.

HARRY A. WOODWORTH.

7-CHARADE.

My first is oft found in the sea,
A strange looking thing I know;
My second never comes to me,
Each night to it I go.
My all means sour; so if you trace,
Pray do not find it in your face.

CHRISTENA HADCOCK.

8-A BIRD PUZZLE IN THE FORM OF A LETTER.

Dear Friend:—I will admit that all words have an articulate sound. When I borrow I'm expected to lend. Harry ran across the farmer's grain. He mistook cucumber seed for muskmelon.

The names of the birds will be found by reading the letter backwards.

EVA C. KELLY.

9-DROP VOWEL PUZZLE.

-s-tr- f-l-l-s-m-st-tl- -s-m-nl-v-ss-m-sth
-d- -s-m-nd- -ss-m-sth-b- -nt-th- -nd-f
-t-r-t-

MAGGIE F. ELLIOTT.

Answers to April Puzzles.

- 1-Labor conquers everything.
2-C
TOM
TENOR
CONQUER
MOULD
RED
R
- 3-Shoe, hat, coat, gloves, jacket, vest, hose.
- 4-Bark.
- 5-2 Lovers sat beneath the shade,
And 1 un 2 the other said,
"How 14 8 that you be 9
Have smiled upon this suit of mine.
F 5 _____thy voice is music melody,
"Tis 4 2 be thy loved 1, 2 say, oh, nymph,
wilt marry me?"
Then lisped she soft, "Why, 13 ly."
- 6- A B L E
B E A D
L A I D
E D D Y
- 7-Mid the dust and speed and clamor
Of the loomshed and the mill,
Midst the clank of steam and hammer,
Great results are growing still.
- 8-Scott, cot; seven, eve; tramp, ram;
honey, one; Chilli, hill; graté, rat; March,
arc.
- 9- IRELAND
ROALU
EVA
L
LFA
ONION
HOLLAND
- 10-Deal with another as you'd have
Another deal with you;
What you're unwilling to receive,
Be sure you never do.
- 11-You talk about farmer's papers,
But search from the east to the west,
And of all the papers you can find
The ADVOCATE is the best.
- 12-Chaw-sir—Chaucer.

Continued on page 150.)

NEW ADVERTISEMENTS.

THE FARMER'S ADVOCATE refuses hundreds of dollars offered for advertisements suspected of being of a swindling character. Nevertheless we cannot undertake to relieve our readers from the need of exercising common prudence on their own behalf. They must judge for themselves whether the goods advertised can in the nature of things be furnished for the price asked. They will find it a good rule to be careful about extraordinary bargains, and they can always find safety in doubtful cases by paying for goods only upon their delivery.

ADVERTISING RATES:

Will be furnished on application, and manufacturers, seedsmen, stock breeders and others will find this journal an unrivalled advertising medium.

The FARMER'S ADVOCATE has the largest circulation among the best people in Canada. Its advertisements are reliable and are read.

SHORTHORN BULLS, COWS and HEIFERS FOR SALE.

Seven young bulls, yearlings, and three calves, also cows and heifers of all ages. All pedigreed, and guaranteed first class. Also about 20 yearling Southdown Ewes, pure bred. Must be sold. Come and see us or write for prices and descriptions.

221-b SETH HEACOCK & SON, Oakland Farm, Kettleby, Ont.

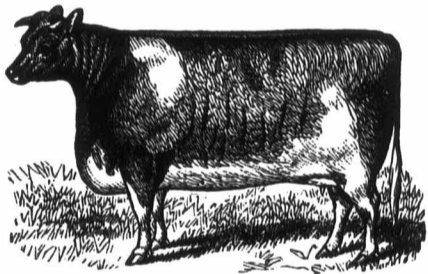
Send for Descriptive Circular of CHAMPION STUMP and STONE LIFTER and NEW CHAMPION HORSE HAY FORK. Manufactured by S. S. KIMBALL, 577 Craig St., Montreal 221-a

FRUIT BASKETS!

Best Strawberry, Peach and Grape Baskets at bottom prices at the Grimby Basket Factory. Address 221-d W. W. CROSS, Grimby P. O., Ont.

GRAND'S REPOSITORY.

47, 49, 51 and 53 Adelaide St. West, TORONTO.



HAVING met with such flattering success at our inaugural sale of Jersey Cattle, we have since been in correspondence with several of the highest class breeders of the above strain, notably Valancey E. Fuller, Esq., Hamilton, Messrs. Rathburn & Son, Deseronto, etc., etc., who have already made large entries for the

NEXT SALE TO TAKE PLACE MAY 27, 28 and 29

Our entry books now being open, we respectfully solicit correspondence from all owners and breeders having such stock to dispose of.

Catalogues may be had on application. 200 HORSES of all descriptions will also be disposed of at the above sale.

221-a GRAND & WALSH, Proprietors and Auctioneers.

Dockings Bros., Waterdown, Ont

MANUFACTURERS OF

Patent 2-horse IRON CULTIVATORS

1st Prize at Toronto, 1883.

Thistle Cutter, 2nd prize at Toronto, 1883, One-Horse Iron Cultivators, 1st prize at Toronto, 1883, Patent Wheel Scarifier, Iron Jointer Plows, and Chip Harrows. Send for Price Lists. Mention "Farmer's Advocate." AGENTS WANTED. 221-a

HAVE YOU A FRIEND WHO WANTS TO GET INTO a good paying business, or would you prefer to go in and win yourself. Agents and farmers will find this an easy way to make money. Write for particulars, enclosing 3c. stamp; don't delay. Address, JAMES LAUT, 281 Yonge Street, Toronto, Ont. 219-y

HENRY SLIGHT, NURSERYMAN, TORONTO. BEST FRUIT TREES, GRAPE VINES, ROSES, RUSSIAN MULBERRY, &c.

Reliable Seeds

The Most Nutritious and Milk Producing variety Grown.

P. W. & Co.'s Improved Yellow Tankard Mangel.

CORN.

Pearce's Prolific, 50 cents per quart, post-paid.
New Silver Flint, 50 cents per quart, post-paid.
Longfellow, \$1.00 per peck.
Our Seed Corn has been selected with the greatest care, and thoroughly tested before sending out, and cannot (weather being favorable) fail to give every satisfaction.

SEED POTATOES.

Clark's No. 1, 50 cents per peck; pure Early Ohio, 50 cents per peck; Early Gem, 75 cents per peck; Pride of America, 50 cents per peck; Susy (the best late potato grown), 50 cents per peck; Wall's Orange, \$1.00 per peck; Morning Star \$1.00 per lb., post-paid; Pride of Canada \$1.00 per pound, post paid.

ROOT SEEDS.

Every root grower should give the following varieties a trial:
P. W. & Co's Improved Prize Swede, 50c. per lb., post-paid.
P. W. & Co's Mammoth Long Red Mangel, 50c. per lb., post-paid.
P. W. & Co's Yellow Flesh Tankard Mangel, the handsomest Mangel grown, 50c. per lb., post-paid. See cut at top.
Beck's Champion Yellow Globe, 50c. per lb., post-paid.
P. W. & Co's Giant Wiltshire Carrot, white, 75c. per lb., post-paid.
P. W. & Co's City Queen Pea, the best second early pea in cultivation, 50c. per qt., post-paid.
The new Tree Bean, the handsomest and most prolific white bean grown, 50c. per qt., post-paid.
Twenty packets of annual flower seeds, and half pound Morning Star Potato sent post-paid for \$1.00.
Twenty packets of assorted garden seeds, and half pound of Pride of Canada potatoes, sent post-paid for \$1.00.
The choicest samples of Wheat, Barley, Oats, Peas, &c. procurable. Prices on application.
GRASSES for permanent pastures or meadows, separate or mixed. Prices on application.

OUR PREMIUM.

To any person sending us an order for \$3.00 worth of the above articles, we will give as a premium one pound of either Morning Star or Pride of Canada potatoes.

Our Illustrated and Descriptive Catalogue free to all on application. Address,

PEARCE, WELD & CO., SEED MERCHANTS, 119 Dundas St. and Market Square, LONDON, ONT. 220

KNABE PIANOFORTES.

UNEQUALLED IN Tone, Touch, Workmanship and Durability. WILLIAM KNABE & CO. Nos. 204 and 206 West Baltimore Street, Baltimore. No. 112 Fifth Avenue, N. Y. 219-c

DEDERICK'S HAY PRESSES.



Manufactory at 90 College Street, Montreal, P. Q. Address for circular P. K. DEDERICK & CO., Albany, N.Y.

FRUIT PACKAGES

BASKETS

of every Description and of the Best Quality, send to

The OAKVILLE BASKET FACTORY.

Strawberry and Raspberry Baskets Cherry, Peach, Plum and Grape Baskets.

Clothes Baskets. Butcher's Baskets 1, 2 and 3 Bushel Baskets.

Satchel and Market Baskets. Gardeners' Plant Boxes.

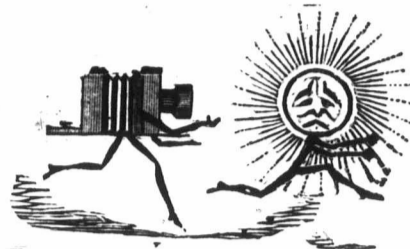
Grocers' Butter Dishes. &c., &c., &c.

W. B. CHISHOLM, OAKVILLE.

VALUABLE FARM FOR SALE.

Lot No. 5, in the Bayfield Con., Township of Goderich, 85 acres, 40 to 50 acres cleared and free from stumps, balance well timbered, has frontage on Bayfield river and on the Clinton Road, and adjoins the incorporated village of Bayfield.

LEITH, KINGSTONE & ARMOUR, Solicitors, 18 King Street West, Toronto. Or to JOHN MORGAN, Hotel-keeper, Bayfield.



J. DIXON is Your Photographer.

His work is equal to any in the City, and prices far below all others. Cabinets, \$2.50 per doz. Note the address,

J. DIXON,

221-f 201 and 203 Yonge St., TORONTO.



P. MILLS, St. Catharines, Ont., manufacturer of Iron and Wood Lift Force Pumps for Wells and Cisterns, Windmills, Rubber Bucket Chain Pumps, Tanks and Self-Sharpening Straw Cutters. Our Iron Globe Top Stock Pumps are specially adapted for farm yards and public places where a very strong and durable pump is needed, one that will not get out of order or be injured by cattle running against it. It will be noticed in the cut shown that iron braces cast to the pump column extend to the four corners of the base, to which it is bolted, thus withstanding any shock, no matter from which way coming. The pump is tight top, preventing anything from being thrown into it. The handles are wrought iron. This is the strongest pump ever constructed, as can be proved by hundreds of testimonials from parties who have had them in constant use for the past thirty years and over. Live agents wanted in unrepresented districts. Send depth of wells and prices will be quoted.

Names of Those Who Have Sent Correct Answers to April Puzzles.

Geo. Pardo, Fred. Werry, Minnie E. Weldon, Sarah M. Brett, Mark Dearing, Mary A. Padget, Wm. Carney, Jas. Cowan, W. D. Ross, Annie B. Craig, J. W. Forbes, Annie B. Scott, Georgina Smith, Louisa M. Berg, J. J. Smyth, Ida Bella Armes, Albert S. Armes, Franklin S. Biggar, Jessie M. Biggar, Chas. H. Foster, Wm. B. Bell, Robt. J. Rick, Libbie Routledge, Aggie Willson, M. C. S., Daniel B. Baird, Annie E. Sterling, Mary B. Currie, Lottie A. Boss, Fred. D. Boss, Ettie M. Jolly, Ida Clemens, May Bakar, Annie May Burns, P. Boulton, Eva J. E. Henderson, W. L. Sissons, Katie Miller, Jessie Fox, Amelia E. Walker, Carrie E. Hendrie, Alice Dowler, Robt. D. Ross, Johanna Beatrice Mode, Mary Marshall, Martha Hodick, Mary McArthur, Henry Reeve, R. Scott, J. E. Cooke, C. Gertie Heck, Isabella Heron, Jas. Watson, Jessie Purvis, Will. McKague, Thos. Armstrong, Harry A. Woodworth, Jas. Paterson, Isabella McLeod, D. A. Cation, Aggie M. Frood, J. Carol Sharpe, Belle Richardson, Rosalie Keilly, Wm. J. Marshall, H. E. Van Dyck, Sarah E. Miller, Willie McKague, Aggie Forbes, Linda Clemens, Ellis F. Augustine, Sarah Wessel, Robt. Kerr, Geo. Van Blaricorn, Lena B. Scott, Byron G. Bowerman, Esther Louisa Ryan, Eva C. Kelly, Maggie F. Elliott, Tiny Docker, Archie Shipley, Robt. Wilson, Ida Shipley, Emily Vansickle, Adelaide Manning, Annie Kelly, Lottie Farr, Christena Sticker, Nancy A. Williams, Will. Thirlwall, Jessie E. Houston, John C. Elliott, Wm. S. Howell, Neil McEwen, Marion K. Hoffman, Robt. Kennedy, May E. Shaver, M. A. Parlee, Ellen D. Tupper, H. C. Wrinch, Maud Dennee, Minnie Watson, Ada Armand, T. F. Thompson, Maggie E. Stenhouse, Peter Lamb, Philip Harding, Christena Hadcock, Carrie Christner, Frank Shearn, Susie McCallum, Amelia Warren, Amelia L. Sumner, Milton B. Wilde, J. P. Stanton, Wm. Bowman.

Plain Talk to Children.

Your every-day toilet is a part of your character. A girl who looks like a "fury" or a sloven in the morning is not to be trusted, however finely she may look in the evening. No matter how humble your room may be, there are eight things it should contain, viz: a mirror, washstand, soap, towel, comb, hair and tooth brushes. Those are just as essential as your breakfast, before which you should make good and free use of them. Parents who fail to provide their children with such appliances, not only make a great mistake but commit a sin of omission. Look tidy in the morning, and after your dinner work is over improve your toilet. Make it a rule of your daily life to "dress up" for the afternoon. Your dress may, or need not be, any thing better than calico; but you have an air of self-respect and satisfaction that invariably comes of being neatly and cleanly dressed. A girl with fine sensibilities cannot help feeling embarrassed and awkward in a ragged, dirty dress, with her hair uncombed, if a stranger or neighbor comes in. Moreover your self-respect should demand the decent apppareling of your body.

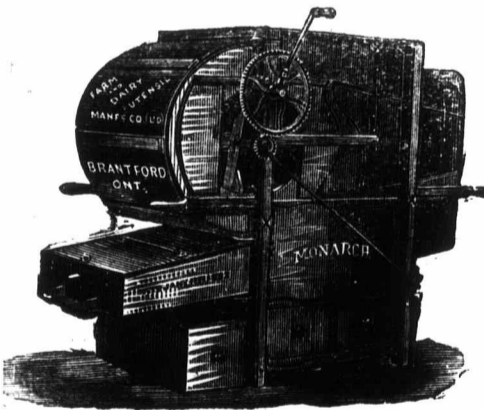
A Sure Cure for Chillblains—Three applications of vaseline will cure the worst case of chillblains. For ordinary cases one or two applications will be sufficient. Although vaseline is made from petroleum, it is far more rapid in its work of healing than kerosene.

(See Commercial, page 152.)

The "MONARCH" Fanning Mill.

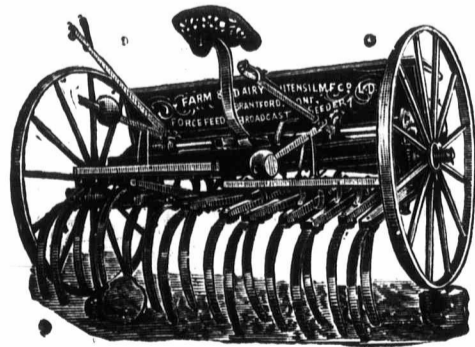
In Capacity, Quality of Work, Adjustability and Finish, unequalled by any. In Range, Variety of Work, Mechanical Principle and Construction, superior to all others. The only Mill that gives perfectly clean seed grain. The only Grading Mill made.

SEND FOR CIRCULARS TO Farm & Dairy Utensil Mfg. Co., Limited Brantford, Ont.



Manufacturers of

Improved "Wide-Awake" Separator, Weller's Independent Spring Tooth Sulky Harrow, with or without Broad Cast, and Grass Seeder; Bickford's Non-Freezing, Force, Lift Tank, and Suction Pumps, Drive Pumps.





"MIDDLESEX,"

The imported son of Rysdyk's Hambletonian, will make the season of 1884, travelling the route taken by Albion in 1883. He is a black-brown, with tan color on muzzle and flanks; stands 15 hands 3 inches high, with beautiful high action, and although he never has been handled for speed, he shows a very fast, rapid gait for a horse of his years. He made a short season last year at the Western Hotel stables, and nearly all the mares served by him were found to be in foal. I am placing the services of Middlesex at a price that any breeder wishing to use a good and well-bred horse, can do so at a moderate figure.

Pedigree.—Middlesex, sired by Rysdyk's Hambletonian; dam by Fiddler, son of Monmouth Eclipse; 2nd dam Col. Feller's mare, Newburgh, New York, by a son of Messenger. Monmouth Eclipse's 2nd dam was by imported Messenger, giving Middlesex two direct crosses of imported Messenger, through his 1st and 2nd dams, and a blood that has always blended well when united with that of Hambletonian. Rysdyk's Hambletonian, the sire of Middlesex, was the greatest sire of trotting stallions the world ever produced, and hundreds of poor men have been made rich by raising one colt from that noble sire, and he has transmitted to his numerous sons that wonderful power of getting horses of great speed, and it was this aim I had in view when I purchased Middlesex.

Appointments.—London—Western Hotel, Saturday, and to 9 o'clock a. m. on Monday. Glanworth—Monday, at noon. Belmont—Monday evening, until 9 a. m. Tuesday. Nilestown, Tuesday, noon. London—Tuesday evening, and until 9 a. m. Wednesday. Ballymote—Wednesday, noon. Bryanston—Wednesday evening, and until 9 a. m. Thursday. Birr—Thursday, noon. Iderton—Thursday evening, and until 9 a. m. Friday, and continue during the season, commencing Saturday, April 26th, and ending Saturday, June 28th, health and weather permitting.

Terms for "Middlesex."—To insure that a mare gets with foal, \$20; season (cash before service), \$15. Mares on insurance must be returned regularly for trial during the season, otherwise they must be paid for as season mares. Should anything happen to Middlesex to cause his death, and his engagements for the season not filled, the services of the stallion Greenwood are to be accepted by the parties who have used Middlesex. Insured mares payable 1st February, 1885. All accidents and escapes at owner's risk. Good pasture will be found for mares sent to this horse at \$3 per month.

"ALBION."

Chestnut horse, sired by Highland Boy; he by Hamlet; he by Volunteer; he by Rysdyk's Hambletonian; dam Lady Martin by Whitbeck's Black Hawk, son of Long Island Black Hawk. He will stand at the Western Hotel stables during the season.

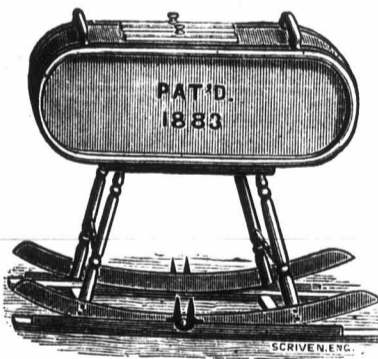
Terms.—\$15 cash at time of service, with privilege to return next season should mare not prove in foal.

CHAS. LAKEY, Manager.

221

T. D. HODGENS, Prop.

BUTTER MAKING MADE EASY BY USING PARMENTER'S ROCKAWAY CHURN.



The best authorities on Butter-making unite in saying that all churns containing paddles or beaters injure the grain of the Butter more or less, thereby impairing its keeping qualities, and that concussion is the true principle for making Butter. As a concussion churn, Parmenter's Rockaway has no equal. It is a model of completeness, simple and durable in construction, a perfect Butter maker, contains no paddles or beaters to spoil the grain of the Butter; is easy to clean, easy to get the Butter out, and best of all, easy to work; a child twelve years of age can work it with ease, or a lady can sit in a chair and work it with very little exertion. All the cream is churned alike, is always right side up, no wasting of cream, admits a plentiful supply of fresh air while churning, no plugs to pull out to let off the gas for fear of an explosion, is light and convenient, stays just where you place it, is particularly adapted to the granulated brine washing process, the quickest and only way of cleansing the Butter from milk without injuring the grain; gives the most perfect satisfaction of any churn ever offered to the public. A sufficient proof of this is the fact that during the summer of 1883 over 140 of these churns were sold within 20 miles of the City of Hamilton, and that after the most thorough and satisfactory trial before purchasing. Among the many testimonials we have received, we publish the following extracts:—

I pronounce it a perfect success in every way, being much more easy to work and producing a finer quality of Butter than any Churn I ever used, and would not part with it on any consideration if it could not be replaced.

W. J. CALDWELL, Hanan P. O., Glanford, Ont.

The fourteen Churns I sold have given perfect satisfaction. They are, I can state, the best Churns in the market, and the testimonial I hold and those I can procure testify to my opinion.

EDWARD BOWCHIER, Agent at Washington, County Oxford.

PRICES.

No. 1—4 Gallons	\$8 50
" 2—7 "	9 00
" 3—10 "	10 00

FOR SALE AT ALL GENERAL AND HARDWARE STORES.

221

H. A. NELSON & SONS,
SOLE WHOLESALE AGENTS, TORONTO & MONTREAL.

FARM FOR SALE.

That fine farm of 300 acres, more or less, in the township of Delaware, known as Green Park, held by the undersigned in trust for the co-heirs of the late Rothwell Garnett, Esq., being lot No. 10 in the 1st concession. Enquire of J. SHANLY, London } Co-trustees
H. MORTIMER, Toronto }
Dated 31st March, 1884. 220-4f

THE CELEBRATED WALKER BUTTER WORKERS

Suitable for use of farmers and country storekeepers. Three sizes. Write for particulars. Dairy salt in large and small sacks constantly on hand.

JAMES PARK & SON,

41 to 47 St. Lawrence Market,

Toronto.

221-c

Seed Potatoes.

Choice New and Standard Varieties.

Apply early. Stock limited.

STEELE BROS. & CO.,

Seed Merchants, TORONTO, Ont. 221-a

PARIS NURSERIES!

FRUIT & ORNAMENTAL TREES, SHRUBS & VINES

at remarkably low prices.

NORWAY SPRUCE FROM \$8 TO \$25 PER 100.

AUSTRIAN PINE FROM \$10 TO \$25 PER 100

GEORGE ARNOLD, Paris, Ont.

Successor to the late Charles Arnold.

221-y

PLANT NOW!

Fruit Trees, Gooseberries, Currants, Raspberries, Strawberries, Asparagus, Rhubarb, etc., Ornamental Trees (Horse Chestnuts specially cheap); Street Trees, 10 to 12 feet; Norway Spruce, all sizes; Austrian Pine, Scotch Pine, White Spruce, Arbor Vita, three varieties; Hedge Plants (20,000 Berberry 18 inch, at \$7.50 per 1,000); Flowering Shrubs, a splendid collection; Weeping Trees, for Cemeteries and Lawns; Herbaceous Plants, especially Phloxes and Paeonias.

In Hardy Grapes we have, besides a fine general collection, Vergennes, Early Victor, Fockington, Bacchus, Moore's Early, Barret, and other scarce varieties. We have extra large apple trees, cheap, to replace gaps in orchards, or for immediate bearing.

Catalogues free on application.

We pack our stock to carry safely anywhere. Orders by mail will have our special personal attention.

J. J. Leson

Toronto Nurseries, Leslie P. O., Ont.

ESTABLISHED FORTY-TWO YEARS.

221-

FREE HOMESTEADS

IN THE
TEMPERANCE COLONY, N. W. T.

100 Acres Free to Actual Settlers.

SPECIAL ADVANTAGES:

- 1st First Class Land.
- 2nd Healthy Climate. No Fevers. Plenty of Pure Water.
- 3rd Convenient to Coal Mines. Navigable River passing through it. Season longer than in Manitoba.
- 4th Located in the centre of fertile Belt. Sober, Thrifty, Moral Neighbors. Supply Store in the Colony.

Saskatoon, the capital of the Colony, already shows prospects of being the most important city on the Saskatchewan River. Lots for sale cheap and on easy terms.

Excursions from Ontario every week. For particulars apply to Head Office, 114 King St. West, Toronto.

M. S. SMITH, President.

221-a W. PEMBERTON PAGE, Manager.

951 FIRE-PROOF CHAMPION ENGINES

BUILT SINCE 1877.



AS A TRACTION ENGINE

The Champion is Unequaled.

D. T. BEDFORD writes from Raglan, 27th Dec., 1883.—"I have had time to test the traction engine you sent me. I have run it over some very bad hills, where it would give two horses all they wanted to take a portable engine. I started from the station, attaching a wagon with 2300 lbs. of coal and two barrels of water. I had no bother to draw it up any of the hills between Oshawa and Raglan. The steering rig is complete; can run over narrow and slippery roads, in fact for a bad place I would rather run by hand than with horses. I can stop and back up (if wanted) going down a steep hill; can run through a foot of snow, and have done it up steep hills. I have moved a mile with a boiler full of water and fire-box of wood and had plenty, and this was over bad roads. I can run my big Climax Separator from daylight till dark on ten barrels of water, and a great deal less wood than I ever could with the 12 h. p. The 16 h. p. is just the thing to thresh with, sets stiller without a clamp than the 12 h. p. did with clamps, and it ran so easy you could hardly tell whether they were feeding or not. I might write two or three sheets of my exploits with the traction, but have not time. Everybody is pleased with it, and I am more than pleased."

WATEROUS ENGINE WORKS CO., BRANTFORD, CANADA.

See Our Straw Burner for 1884. It is a pronounced success. Full supply of Engines, repairs and settlers' outfits kept by our branch Foundry and Machine Shop in Winnipeg.

WATEROUS ENGINE WORKS CO., BRANTFORD, CANADA

The IMPROVED DANISH MILK SEPARATOR of Burmeister & Wain

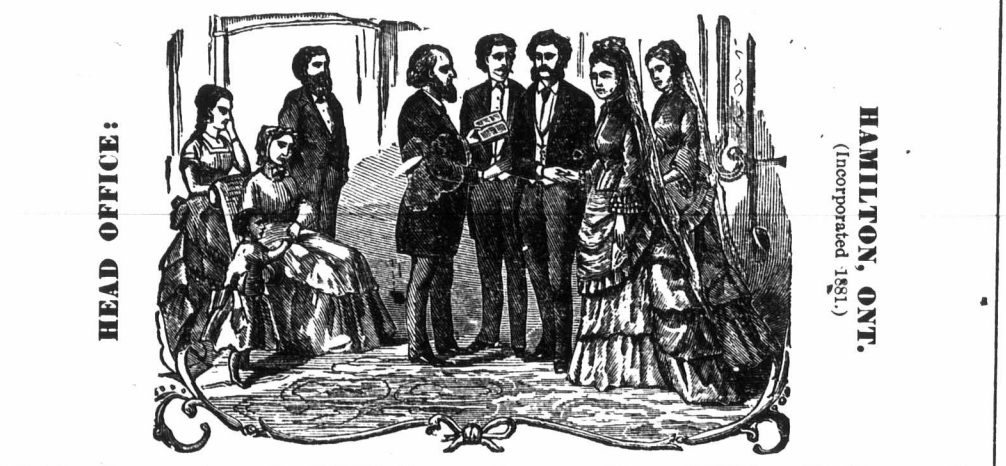
which was awarded two gold medals (one in class A, separators for two horses, and the other in class B, or separators for one horse) at the Alborg Centrifugal Milk Separator competition, and also a silver medal at the last St. John, N. B., exhibition. The large size, A machine, requires 1 1/2 horse-power to run it, and will skim 1,200 pounds of milk per hour. The B size requires 0.88 horse-power and will skim 700 pounds per hour. A summing up of the result of the Aalborg and Vesterung competition may be described as follows:—1st, With the same completeness of skimming and the same quantity of milk worked per hour, DeLaval's separator requires one-third more power. 2nd, With the same completeness of skimming and the same consumption of power, Burmeister & Wain's small (B) separator skims one-third more milk than DeLaval's. 3rd, With the same quantity of milk worked per hour and the same consumption of power, DeLaval's leaves 64 to 65 per cent. more fat in the skim milk. The same report shows that Burmeister & Wain's large size separator requires 1.50 horse-power. Table showing the relative maximum capacity of the Burmeister & Wain and the DeLaval milk separators, and the amount of motive power required to drive them.

J. N. FJORD'S TABLE.

	Capacity.	Completeness of skimming.	Speed.	Motive power required.
	Pounds per hour	Fat left in the skim milk.	Revolutions per minute.	Horse-power.
Laval Separator	700 lbs.	0.29	7,000	1.20
Burmeister & Wain (small size)	700 lbs.	0.30	3,000	0.88
Burmeister & Wain (large size)	1,200 lbs.	0.25	2,000	1.50

221-c Particulars sent free by addressing U. C. PETERSEN & Co., P. O. Box 1379, Montreal.

\$100 to \$5000
Paid on Marriage by Mutual Marriage Aid Association.
Has Paid in Benefits to its Members over \$100,000.



Business done in 1883 Exceeds over Two Million Dollars.
This is the only Company in Canada that gives an absolute guarantee as to the cost. Its advantages are low cost of carrying certificate, large membership, the oldest and strongest Company in existence and UNDOUBTED SECURITY. Write for information.
Agents Wanted. W. B. WEBBER, Secretary, Hamilton, Ont.

Notice.

The attention of our readers is drawn to the advertisement of the Knabe piano on page 149. These pianos have a high reputation.

The Grand Dominion and 39th Provincial Exhibition will be held in the City of Ottawa, from the 22nd to the 27th of September next. The second Provincial Fat Stock Show will be held in Guelph, in the third week of December next.

I find the FARMER'S ADVOCATE a very practical, common-sense paper, suitable and useful to prairie farmers. R. J. B., N. W. T.

I am taking the Rural New Yorker. Several copies of it have been received, and while I do not say it is not worth the price paid, yet my conviction is that the ADVOCATE contains more reading matter of interest and benefit to the farmer. H. M., Jr., Paris, Ont.

Commercial.

THE FARMER'S ADVOCATE OFFICE, London, Ont., April 30, 1884.

WHEAT.

English quotations were up a penny on all sorts of wheat to-day, with markets strong. Montreal quiet and States markets showing little change. A cable despatch from the Secretary of the London Corn Exchange reports enormous stocks of wheat, barley and corn in the London waterside granaries. Of wheat there are 454,000 quarters more than last year. This shows that the stocks in London and Liverpool exceed those of last year at this time by over 5,000,000 bushels, a great portion of which is said to be held by firms who bought it at considerably higher prices than can now be realized. The Toronto market was inactive all over. Wheat was scarce and firm, with No. 1 spring worth \$1.12, and No. 2 about \$1.10; fall steady, a round lot of No. 2 lying outside sold yesterday at equal to \$1.11 here, which was probably the value to-day, with No. 3 worth \$1.08 to \$1.09.

FLOUR.

It is hardly too strong a term to use to say that the flour trade amounts to stagnation. Prices nominally unchanged; holders steady and not inclined to accept bids for superior extra and extra.

OATS.

quiet and unchanged at 37 1/2 to 38c., but no sales reported to-day.

BARLEY.

scarce and wanted; No. 1 worth 82c.; No. 2 from 76 to 77c.; extra No. 3 from 71 to 72c., and No. 3 from 62 to 66c., but no movement reported.

PEAS.

quiet and unchanged.

POTATOES.

sold at 68c. for good, and at 60c. for small on track.

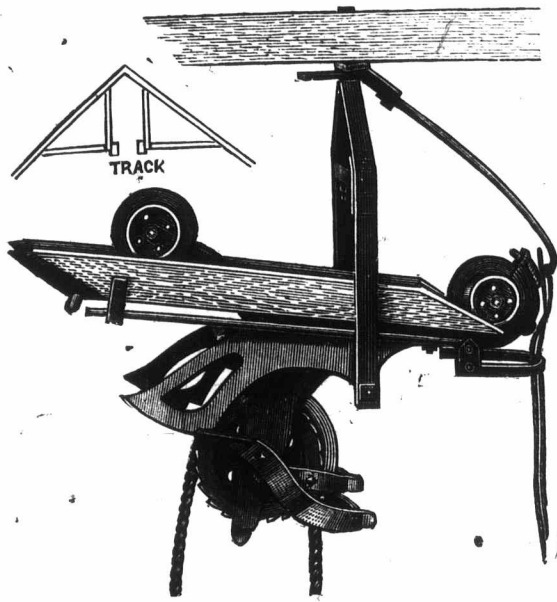
BUTTER.

steady at 19 to 21c. for really choice; new rolls steady and in good demand, about 18c.

EGGS.

unchanged, with all offered taken in round lot at 15c.

(Continued on Page 154.)



THE TURN-TABLE AND CAR.

CHAMPION HAY and GRAIN UNLOADER

IS THE BEST OUT

- It unloads all a farmer grows; long or short, loose or in sheaves.
- It unloads uniformly in three to six minutes.
- It does it easily and never fails to get a draft.
- It leaves no littering on floor or wagon.
- It takes a load off at three or four drafts, as you like it.
- It has a turn-table, for turning car without leaving barn floor.

Write for Circulars. Will send on trial to any responsible party. AGENTS WANTED.

T. G. GILLESPIE, CAMPBELLFORD, ONT. 221

COOLEY CREAMER

FOR SALE—The patent of the celebrated "Cooley Creamer," (introduced by Mr. Moses Moyer, Walkerton, Ont.) for the counties of Perth, Middlesex and Elgin. By far the best for farmers and dairies. Over 3,000 in use in Waterloo County. Will sell Township or County rights. Apply to SIMON P. BOWMAN, Berlin, Ont. 220-b

SWISS SOAP!

Guaranteed Best in the World! Ask Your Grocer For It! Manufactured only by the HURON SOAP COMPANY, Goderich, Ont. 220-y

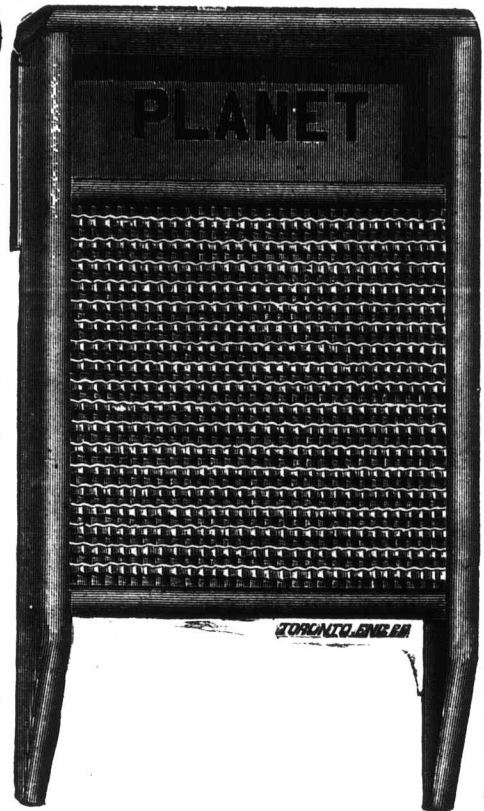
TREES! TREES!

CLOSING OUT SALE. The large stock of these Nurseries, comprising Fruit, Ornamental, Evergreen Trees, Shrubs, Vines, Etc. is offered in lots to suit purchasers. Prices consequently far lower than ever before offered in Canada or United States. Example per thousand: Apples, \$40; Currants, \$9; Norway Spruce, \$20 Shrubs \$6 per hundred. Splendid opportunity for those commencing nursery business. Send for price list. Address ST. JAMES' PARK NURSERIES 220-b Box 343, LONDON, ONT.

WASHBOARDS

THE BEST IS THE CHEAPEST.

PLANET



PLANET

IS THE BEST.

ASK FOR IT AND TAKE NO OTHER! SATISFACTION GUARANTEED!

Saves Time, Labor and Soap.

E. B. EDDY, HULL, P. Q.

Manufacturer of PAILS, TUBS, WASHBOARDS and MATCHES

All goods manufactured by me bear my name, and are guaranteed to be the best in the market. E. B. EDDY.

WHOLESALE AGENTS: H. A. NELSON & SONS, TORONTO and MONTREAL 221-y

WANTED AS AGENTS

Hardware, Stove and Tin, Agricultural Implement and Country Dealers to take Agency for the Zimmerman Fruit & Vegetable Evaporator OVER 15,000 SOLD.

The only Galvanized Iron Evaporator in the market, made on correct and scientific principles and fully protected by Letters Patent. Five sizes made. We will send on application free, the best and most complete work, fully illustrated, on evaporating fruits, preparing, bleaching, conserving, packing and marketing same. Send for Catalogue. Address ZIMMERMAN MANUFACTURING CO., Cincinnati, Ohio, or Burlington, Iowa.

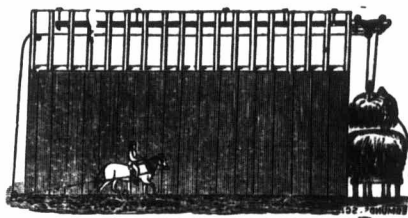


CHEAP TELESCOPES

A portable Achromatic Telescope that will tell the time of the church clock in Toronto at three miles off, with extra astronomical eye piece and sun glass for astronomical use. It will show Jupiter's moons, spots on the sun, mountains in the moon, &c. Sent to any address on receipt of \$5.50.

CHAS. POTTER, Optician, 31 King St. East, Toronto. ESTABLISHED 30 YEARS. 220-1

BUCHANAN'S



PITCHING MACHINE

For Unloading Hay and all Kinds of Loose Grain.

This Machine can be used in sheds, on stacks or in barns. It can be used to unload on either side of barn floor without being turned around on the track, thus saving the trouble and annoyance in climbing up to the top of the barn to make the change. This is a feature that no other Carrier possesses, and any person who has had the trouble of climbing to the top of the barn to make the change will appreciate this feature. Cur Ball Pulley does away with the objection of bundles getting twisted and preventing the Carrier from starting when the load is drawn up, which trouble is sure to arise with all bale pulleys. I hold a patent for the Dominion on the Ball Pulley, and anyone infringing on the same will be prosecuted. Farmers are cautioned against buying any machines with a Ball Pulley attached, or they will be held liable for damages. AGENTS WANTED. Send for Circular. M. T. BUCHANAN, Manufacturer, INGBERSOLL, 219-d

The Cheese Market.

There is very little to be said about the cheese market, except that in the almost entire absence of foreign demand it has continued firm in price. We have never known the exports to run so light, and there would seem to be a motive in it beyond what is apparent at a glance. It means that the English are not only unwilling to take our cheese at the price now ruling, but will not take new stock unless they can get it cheaper also. They do not propose to start new cheese at 15c., when they can buy their own old and fine stock at a price that is equivalent to that on this side of the water. Probably a small quantity of the earliest make can be used for our home trade at something like the top-most figure, but as soon as that very moderate demand is filled, we must depend upon the foreign trade. Then will come the test of their anxiety to get our soft, new stock, and unless they manifest more anxiety to get it than they now do to get our old stock, there will have to be a reduction in price to meet their more moderate views. This, as it seems to us, is the lesson exporters intend to teach by refusing to take our cheese at present rates, and it will be well for dairymen to understand the situation in order that they may not be disappointed when their new stock comes into market. The old cheese is now so limited in amount that there will be no necessity for holders to make any concessions on that—the home trade alone can consume it. But this forms no criterion for the new make, and we shall be surprised if any large quantity of it sells above 14c. Indeed it is not likely that it will even remain at that point very long, but we do not believe that any sensible maker will grumble at 13c. or even 12c. If prices are maintained at that point, or thereabouts, as long as they were last year, the season will certainly have a good send off. Following is our usual comparative table:

	Rec'ts.	Exp'ts.	Price.
March 25, 1882.....	12,671	19,574	13½c
March 24, 1883.....	14,439	8,500	14½c
March 22, 1884.....	8,546	1,880	15c

—Utica Herald.

The Farmers' Market.

Toronto, Saturday, April 26, 1884.—Grain receipts to-day were one load of fall wheat at \$1 06. and about 150 bushels of oats at 43 to 43½c. Hay scarce at \$7 to \$11 for clover and up to \$16.50 for timothy. One load of straw brought \$9 and another \$10. Hogs sold at \$8 Butter and eggs generally unchanged.

PRICES AT FARMERS' WAGONS.

Wheat, fall, per bushel.....	\$1 00 to \$1 05
Wheat, spring, do.....	1 08 1 12
Wheat, goose, do.....	0 75 0 82
Barley, do.....	0 65 0 75
Oats, do.....	0 41 0 42
Peas, do.....	0 73 0 76
Rye, do.....	0 00 0 00
Dressed hogs, per 100 lbs.....	8 00 0 00
Beef, hind quarters.....	10 00 11 00
Beef fore quarters.....	7 50 8 00
Chickens, per pair.....	0 80 0 90
Ducks, do.....	0 90 1 00
Geese, each.....	0 00 0 00
Turkeys, each.....	1 25 2 00
Butter, pound rolls.....	0 20 0 25
Do, tub dairy.....	0 18 0 20
Eggs, fresh, per dozen.....	0 15 0 00
Potatoes, per bag.....	0 80 0 85
Apples, per bbl.....	3 00 4 00
Onions, green, per peck.....	0 25 0 00
Cabbage, per dozen.....	1 00 1 50
Turnips, per bag.....	0 40 0 50
Carrots, do.....	0 50 0 60
Beets, per peck.....	0 25 0 00
Parsnips, per bag.....	1 00 0 00
Rhubarb, per dozen.....	1 50 0 00
Radishes, per bushel.....	1 00 0 00
Hay, per ton.....	7 00 14 50
Straw, do.....	5 50 10 00

(See Stock Notes, page 156.)

LANGSHAN EGGS
for hatching. (Crowd's strain.) \$1 per sitting.
Address **MRS. WM. MASSON,**
220-c CHERRY GROVE, Ont.

C. THAIN,

MANUFACTURER OF
DOUBLE MOULD PLOWS with POTATO DIGGER ATTACHMENT
Two-Row Turnip, Carrot and Mangold Drill, Horse Hoes,
Iron Harrows, Wagons and Sleighs of different patterns
on hand and made to order in their season.
220-c **C. THAIN, Guelph, Ont., Canada.**

W. DOHERTY & CO.,

ORGAN
MANUFACTURERS.
Clinton, - - Ontario.
220-y

BRICK & TILE MACHINE

We are now manufacturing a first-class
Augur Brick and Tile Machine
which is capable of making from
10,000 to 15,000 Tile per Day.
Machine warranted in every respect both in strength and
quality. Send for particulars.
D. DARVILL & CO.,
220 a London, Ont.

Gurney & Ware's Standard Scales



Send for catalogue to
201-1 eom

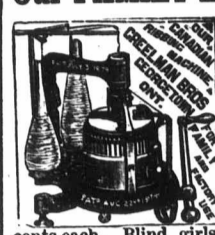
Have taken first
Prize at 22 Provincial
Exhibitions;
first Prize at Provincial
Exhibition
London, 1881.
Prizes taken in
England and Pro-
vinces of Quebec
and Nova Scotia.
Hay, Cattle, Coal,
Stock, Mill, Grain,
Dairy, Railroad &
Grocer Scales.
None genuine
without name on.
All makes of scales
promptly repaired
GURNEY & WARE,
Hamilton, Ont.



**COMBINED
Milk Bucket & Stool**
(Dominion Patent)

This Milk Bucket and Stool is invaluable to Farmers
and all persons connected with the selling,
buying, or handling of Milk.
**By its use the Milk is kept pure and clean;
It Saves every drop of Milk; It is con-
venient for Milking, and does away with
the old fashioned stool.**
Every Canadian farmer should have them and use
them. Manufactured by the
"Ontario Milk Bucket Mfg. Co."
159 QUEEN STREET EAST, TORONTO.
Sold in every County of Ontario by Special Agents
219-c

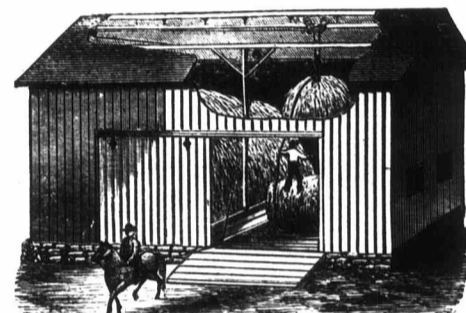
Our FAMILY KNITTING MACHINE



Under Shirts, Drawers, Scarfs,
Children's Wear, Hosiery, Caps,
Gloves, Mitts, &c. All sizes can
be made on
Our Family Machine.
Our Book of Instructions will
teach you all. It is so simple
six under-shirts can be made in
one day, giving a profit of 75
cents each. Blind girls can knit and finish one dozen
pairs of socks per day, and \$2, \$3 and \$4 per day can be
easily made on our "Great Family Canadian Ribbing
Machine."
Send for descriptive Catalogue and Testimonials
from the blind.

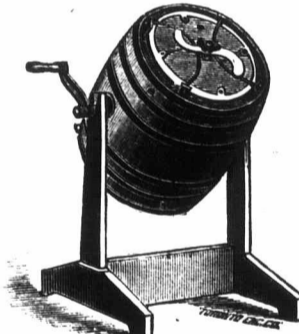
CREELMAN BROS.,
219 eomy Georgetown, Ont.

**E. L. CHURCH'S
Hay Elevator & Carrier.**



THE VERY BEST IN THE MARKET
There are thousands of these Elevators and Forks
now in use in Canada, everywhere giving the very best
satisfaction. Sent on trial to responsible farmers.

The REVOLVING BARREL CHURN



This is the most popular Churn manufactured in the
United States, and is fast growing in favor in Canada.
Be sure and try one before purchasing elsewhere.

MANUFACTURED BY
WORTMAN & WARD
LONDON, - ONTARIO.
219-c Cor. York and William Streets

MONARCH HORSE HOE

AND CULTIVATOR COMBINED
For Hoeing & Milling Potatoes,
Corn, Onions, Beets,
Cabbages, Turnips, &c.
**SENT ON
30 Days'
TEST TRIAL.**



An immense saving of labor and money.
We guarantee a boy can cultivate and hoe
and hill potatoes, corn, etc., 15 times as
easy and fast as one man can the old way.
Illustrated Catalogue FREE. AGENTS
WANTED. Mention this paper. Address
Monarch Mfg. Co., 206 State St., Chicago, Ill.
220-g



The **NEW TOOLS** we offer this season, together with recent improvements, place the "PLANET Jr." Farm and Garden Implements beyond all Competition.

S. L. ALLEN & CO.
127 & 129
Catharine Street
Phila.

NEW CATALOGUE
"PLANET Jr."
Horse Hoes, Cultivators, Seed Drills, Wheel Hoes & Potato-Diggers.

SEND NOW, if you are interested in Farming, Gardening or Trucking, for our New Catalogue containing 35 pages and over 40 illustrations, describing fully the

216-1

Feed the Land and it will Feed You.

LAMB'S SUPERPHOSPHATE OF LIME FINE BONE DUST.

SEND FOR CIRCULAR AND PRICE LIST.

DEPARTMENT OF AGRICULTURE AND ARTS, ONTARIO,

Toronto, Jan. 21st, 1882.

PETER R. LAMB & CO., Toronto.

GENTLEMEN,—Having requested Prof. Pantou, of the Ontario School of Agriculture, to estimate the commercial value of a specimen of your Superphosphate of Lime, based on an analysis made by Prof. Heys, I have the satisfaction of informing you that Prof. Pantou reports that he substantially agrees with Prof. Heys' estimation of the commercial value of your superphosphate.

S. C. WOOD, Treas. of Ont.

PETER R. LAMB & CO.
Manufacturers,

Established 1834.

219-c

TORONTO, ONT.

ONTARIO PUMP CO., Limited,

TORONTO, ONT.,

MANUFACTURERS AND DEALERS IN

Wind Mills, I. X. L. Feed Mills, Hay Carriers, Horse Hay Forks, Tanks, Double and Single Acting Pumps, Wood or Iron. Also Steam Pumps and Water Supplies, Iron Pipe and Pipe Fitting, all kinds.

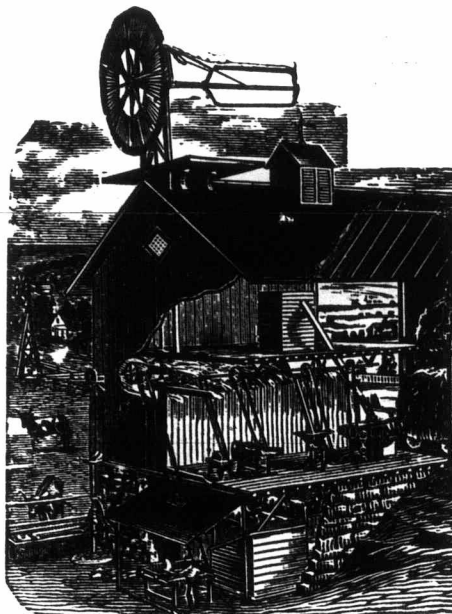
STATE WHAT YOU WANT AND SEND FOR ILLUSTRATED CATALOGUES.



Halladay's Standard Wind Mills. 17 Sizes.



Pumps—Iron & Wood. Force or lift. Deep well pumps a specialty.



Geared Wind Mills, for driving Machinery, Pumping Water, &c. From 1 to 40 horse power.

March 14, 1884.



I X L FEED MILLS.
The cheapest, most durable, and perfect iron feed mill ever invented.

ONTARIO PUMP CO.,

Gentlemen,—In regard to the 16-foot geared Wind Mill I bought of you, I can say it more than fills my expectations in every respect. In a fair to good wind I can saw wood at the rate of four cords of hard wood per hour, cut once in two. In a stiff wind I open the fans just half way and get all the power I require. In regard to your feed mill it is just grand. I have ground peas and oats at the rate of a bushel in three and a half minutes, and ground it as fine as one would wish for. I can grind fine cornmeal, also Graham flour. Have ground, since the 15th of February, 325 bushels of grain for customers, besides doing my own work with it. One man brought a grist of screenings, such as small wheat, mustard, and pussy grass seed, thinking that I could not grind it; but I ground it to powder, looking just like ground pepper. Your 13-foot geared mill, I think, is quite large enough for any farmer to do his own work.

Yours truly, EDWIN KEELER,
Maitland P. O.

Stock Notes.

Mr. Henry Groff, of Elmira, purchased from Mr. Pickard, of Exeter, a three year old steer weighing 3,000 lbs.

Wm. Wise, of Goderich township, has a thorough bred Durham heifer, only sixteen months old, which has recently calved.

T. J. Nankin, of Shade Farm, Merivale, Ont., added to his stock the Ayrshire bull "Sultan," also the heifer "Lady Bell," and the aged cow "Primrose."

At Hon. M. H. Cochrane's sale of Angus and Herefords, at Dexter Park, the Polled females averaged \$301.78, and bulls \$386.67; Hereford females averaged \$496, and males \$445.83.

CLYDESDALE SALES.—The following sales have been made by Mr. John Isaac, Bomanton, Ont.:—To Geo. Locke, Montana, Ill., one stallion; James Russell, Richmond Hill, Ont., one colt (imported); M. C. Dougal & Bros., Mullforee, N. Y., two mares and foals.

Mr. H. Sorby, Gourock, Ont., has made the following sales:—To G. L. Smellie, Manitoba, one Berkshire boar and one sow; to A. Sherratt, Speedside, Ont., one Berkshire boar; to Geo. Green, Fairview, Ont., one imported boar and sow; to John Cattel, Farquhar, Ont., one pair Cotswold ewes.

JERSEY SALES.—Samuel Smoke, of Canning, sold William Rolph, of Markham, three Jersey heifers. "Flower of Glen Ruge," not two years old, brought \$1,000, and "Pride of Glen Ruge," and her heifer, eleven months old, brought \$500.

An American horse dealer recently purchased from R. Murray, Tuckersmith, a two year old entire colt at \$225; James Horton, Hibbert, a two year old entire colt, at \$275; R. Sanderson, Londesboro, a two year old entire colt, \$210; Christopher Nesbitt, a two year old filly, \$250; Mrs. Gray, Tuckersmith, a two year old filly, \$190; Harry Mason, Tuckersmith, a two year old filly, \$165.

(Continued on page 158.)

Insurance.

There are a very large number of insurance companies of various kinds in operation in Canada. Some are safe and some are dangerous; many have failed and many will fail, and the sooner the practices and plans of some are exposed the better it would be for the farmers. There are dangers that it is hazardous for us to expose. We had one action entered against us for stating facts; the law does not protect one from the expense of a libel suit, when facts are stated, and in fact, the greater the truth the greater the libel. This should not be so; but to return to insurance. In this issue appears an advertisement of the London Mutual. We have had our farm buildings insured in this company for nearly twenty years, and are satisfied with it. You can see the accounts of its progress in the advertising department. They are now about to extend their business into the Maritime Provinces. Thos. Robertson, of Barrington, Nova Scotia, is the general agent for those Provinces. Our maritime friends can obtain full particulars by applying to him. You will have only your premium note to pay, and will recover some or your loss if an accidental fire should occur.

COCKSHUTT PLOW CO'Y. (LIMITED)

MANUFACTURERS OF
**Chilled & Steel Plows
Sulky Plows and
Prairie Breakers.**

OUR JUSTLY CELEBRATED
**DIAMOND-POINT
CULTIVATOR.**

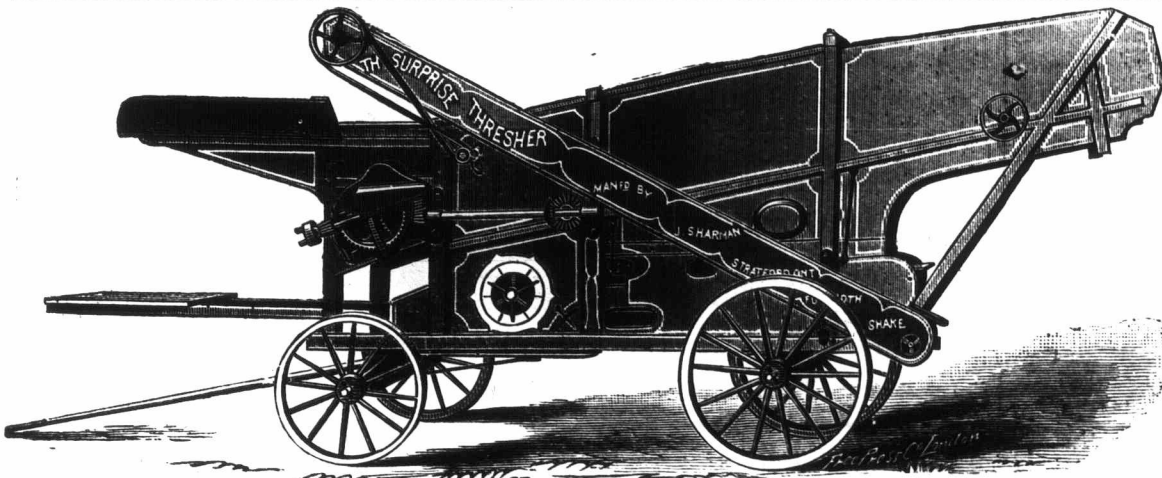
Our **Diamond-Point Cultivator** was patented in 1880, and has proved itself to be the **best weed cutter and land cultivator**, combining the **best points for either work.**

Buy the Diamond-Point, suitable or all kinds of Root and Corn Cultivation.

Send for circulars to
COCKSHUTT PLOW COMPANY
(Limited.)
BRANTFORD, ONT.



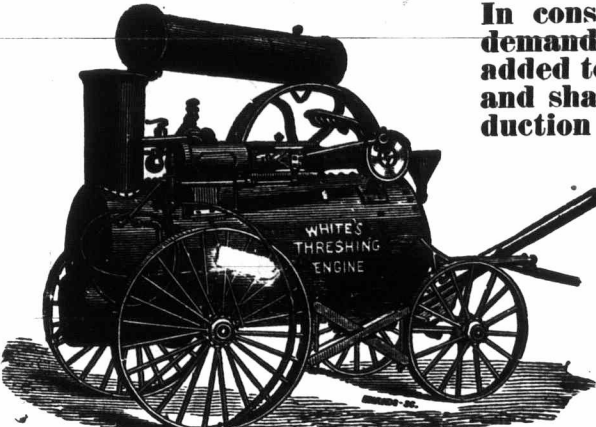
425 Sold in 1881.
890 Sold in 1882.
1800 Sold in 1883.
MAKING 2000 FOR 1884.



If you want a
THRESHER
either for travelling purposes, or for farmers' own use, or a company of farmers, send post card asking for descriptive circular, with the different machines and powers illustrated and price list. The best style of Thresher in the world, fast and easy running. State for what purpose you want it.

Mention FARMER'S ADVOCATE.
221

JAMES SHARMAN, Stratford, Ont.



In consequence of the increased demand for my **ENGINES**, I have added to my shops and machinery, and shall largely increase the production of engines for 1884.

It is licensed by all Insurance Co.'s, and has proved itself to be the most durable.
The Engine for the Northwest is made to burn either coal, wood or straw.
Farmers, procure a **Genuine White Threshing Engine at the Forest City Machine Works, London, Ont., Can.**
GEORGE WHITE, Proprietor and Manager
H. B. WHITE, Supt. of Machinist Dept.
A. W. WHITE, Supt. of Erecting Dept.
HUB. J. WHITE, Secretary-Treasurer.
F. J. WHITE, Assis ant-Secretary.

219-y

"THE GOLDEN BELT"

ALONG THE
KANSAS LANDS **KANSAS DIVISION U. P. R'WAY.**
STOCK RAISING **WOOL GROWING**
Buffalo Grass Pasture Summer and Winter. Unsurpassed for Climate, Grasses, Water.
CORN and WHEAT **FRUIT**
200,000,000 Bus. Corn. 80,000,000 Wheat. The best in the Eastern Market.
Pamphlets and Maps free. **B. McALLASTER, Land Commis'r, Kansas City, Mo.**

219-c



THE CHEAPEST FORCE PUMP IN THE WORLD!

Especially adapted for spraying fruit trees, watering gardens and lawns, and washing carriages. Will throw a steady stream 60 feet. Can be applied to any service that a cistern or force pump can be used for. Send for Catalogue and Price List.
For sale in Canada by Waterous Engine Co., Brantford, Ont.

FIELD FORCE PUMP CO.,
Lockport, N. Y. U. S. A.

VIENNA BAKING POWDER



S.H. & A.S. EWING
Proprietors & Manufacturers
57 & 61 ST. JAMES ST
MONTREAL.

For Sale by all Grocers.
215-y

40 Cards

All covered name, Gold Finish, Glass, Lap corner, German motto, Elite Letter and Case, name in gold and
WEST & CO., New Haven, Ct. 219-c

STOCK NOTES.*(Continued from page 156.)*

Mr. John Hope, of the Canada West Farm Stock Ass'n, Bow Park, Brantford, writes to us as follows:—Our herd of Shorthorns have gone through the winter in fine shape, and have had many valuable additions by birth since the new year. The young Duke bull from 9th Duchess of Hillhurst, when ten months old, weighed 996 lbs.; he gives promise of growing into a very massive bull. We have a few fine young bulls on hand.

A meeting of the Devon breeders of the United States was held in Pittsburg on the 26th March, and organized themselves into the American Devon Cattle Club. They adopted a constitution and provided funds for the publication of a Devon Record. Their annual meeting will be held on the third Wednesday of each year, at such places as will be designated by the Executive Committee. John M. Miller, of Pennsylvania, was chosen President.

If it is desired to fatten an animal rapidly sweet foods such as molasses are the most effectual. This may be easily understood from principle. Most of the carbonaceous matter of foods exists in the form of starch which, being insoluble, must be changed into its soluble form, sugar, before it can be assimilated; so that if sugar or molasses be given, the assimilating is more rapid. However, it must be fed with foods rich in nitrogen, such as oilcake, so that muscle will be formed at the same time as fat. But this system of feeding is destructive to the breeding principle of both male and female animals.

SHORTHORN SALES.—Mr. John Isaac, Boman-ton, Ont., has made the following sales:—To Hugh Thompson, St. Marys, Ont., ten heifers; Frank R. Shore, White Oak, Ont., one bull and ten heifers; S. Isaac, Baltimore, Ont., one bull and six heifers; Donald Douglas, Warkworth, Ont., one bull, one cow and two heifers; Geo. Dodge, Plainville, Ont., one cow, one heifer and bull calf; W. J. Isaac, Harwood, Ont., two heifers; John Muncey, Fraserville, Ont., one bull and one heifer; Arthur Johnston, Greenwood, Ont., one bull; Joseph Thompson, Whitby, Ont., one bull; Thos. Russell, Exeter, Ont., one bull calf; Geo. Keith, Toronto, Ont., one bull; Robert Cockburn, Campbellford, Ont., one heifer; Mr. Ketcheson, Minne, Ont., one bull calf; Geo. Taylor, Rockwood, Ont., one heifer and one bull calf. Twenty-six of the above were imported from the herd of Mr. S. Campbell, of Aberdeenshire, Scotland.

Mr. H. Owen tells the Michigan Farmer of his successful treatment of numerous patches of Canada thistles during the last ten years: "I keep, on an average, about 200 sheep, and whenever I discover a patch I manage to salt the sheep there, putting a small handful of salt in each thistle at the root. Besides the action of the salt, which tends to destroy them, the thistles are eaten by the sheep close to the ground, and after one or two saltings the grass among the thistles, as well as everything else that hides them from view, has been eaten off so that each thistle is easy to be seen and to receive its handful of salt. After this treatment it is seldom that any thistles are seen the second year."

MARLBORO RED RASPBERRYSend to the originators for history and terms. **A. J. CAYWOOD & SON,** Marlboro, N. Y.

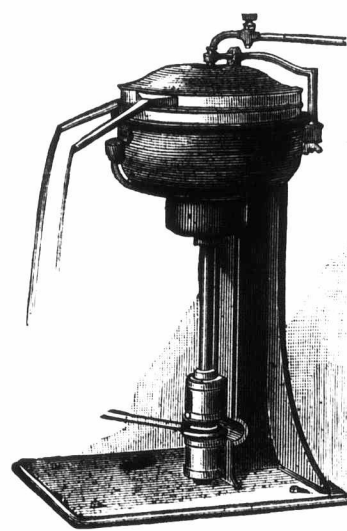
218-d

**HAMILTON
AGRICULTURAL WORKS****The Pioneer Threshing Machine
Works of Canada.**

ESTABLISHED 1836.

Our Celebrated **GRAIN SAVER** is the Best and Most Perfect **THRESHER** and **SEPARATOR** made in the Dominion, being first over all others for**Durability, Workmanship, Fast & Clean Work,
Perfection of Parts, Ease of Management,
Simplicity of Construction, Light-
ness of Draft, Capacity for Work.**We have Machines working in all parts of Canada, giving the very best satisfaction, when driven by either **Steam or Horse Power.****It is a General Favorite with the Farmers, who prefer it
for Fast and Clean Work.****SPECIAL SIZE MADE FOR STEAM POWER.**Address us for Circular and Price List of **THRESHERS, CLOVER MILLS, HORSE POWERS, REAPERS AND MOWERS.** A personal inspection is solicited.

173-1eom

L. D. SAWYER & CO.,
HAMILTON, ONT., CANADA**DeLAVAL CREAM SEPARATOR****The Greatest Dairy Invention of the Age!
Awarded Thirty-two Gold Medals!**

By this system the cream can be separated from the milk immediately after it comes from the cow, consequently the use of cream and milk twenty-four to thirty-six hours earlier than by any other process.

No ice or expensive buildings necessary.

The construction is simple and the apparatus easily cleansed.

No heavy foundations required.

With less than one-horse power it will skim the cream from 750 to 800 pounds of milk per hour.

The DeLaval Cream Separator is now in use in the best dairies and creameries in Europe and the United States.

For further particulars please address

FRANK WILSON

P. O. Box 1824, MONTREAL, CANADA.

General Manager DeLaval Cream Separator Co.'y of Canada.

220-c

FARMS FOR SALE

In Western Ontario a number of choice Farms. Full description list sent on application. Correspondence invited, full information given, and on personal application at my office, plans of the townships shown, enabling strangers to see the position of properties and their proximity to towns, railway stations, &c. Farms with acreage to suit every one. Send to

CHARLES E. BRYDGES,
Real Estate Agent.

Land office, 98 Dundas street west, London, opposite to the City Hotel, for list of farms for sale. 176-t

BARB WIRE FENCING

First Prize awarded over all competitors at the last Exhibition held in Montreal, and Silver Medal and diploma for the machine used in the manufacture of Barb Wire Fencing.

THE MANITOBA LOCKED



FOUR-POINT BARB GALV. STEEL WIRE FENCING.

Ordinary Fencing Barb, 7 inches apart; Hog Wire Fencing Barb, 4 inches apart; Plain Twisted Wire Fencing, without barb, at reduced prices.

For circulars and price lists address
The CANADA WIRE Co.,
H. R. IVES, President and Manager,
215-y **Queen Street, MONTREAL.**

THE RAILROAD COLORS

These Colors are very finely ground, and are all of the same thickness and consistency as white lead, only requiring to be thinned with raw linseed oil or turpentine to be ready for use.

THEY ARE THE BEST PAINTS IN THE WORLD!

for all interior or exterior painting, and are composed of TWENTY COLORS, all of which, in combination or contrast, are suitable for either purpose. The

MOST ECONOMICAL PAINT!
One painting with the Railroad Colors is the equivalent in every respect of two paintings with colors made of the best white lead. The

MOST DURABLE PAINT!
which can be obtained by any means and at whatever cost, and they will resist the influence of light, heat and moisture longer than any other paint. The superiority of the Railroad Colors for house painting, agricultural implements and general use is no mere matter of assertion. They have stood the test for years, and more than one hundred thousand houses stand at this writing throughout Canada and the United States painted with the Railroad Colors, and among all the owners of these there has not been in a single instance a reasonable ground for complaint.

MANUFACTURED BY
WILLIAM JOHNSON,
578 William St., Montreal, P. O. Box 926.
Sample Sheet and Book on Painting supplied on application. 214-v

Agricultural Savings & Loan Company,
LONDON, ONTARIO.

President—WM. GLASS, Sheriff Co. Middlesex.
Vice-President—ADAM MURRAY, Co. Treasurer

Subscribed Capital,	\$600,000
Paid Up do.	575,000
Reserve Fund,	61,000
Total Assets,	1,339,000

The Company issues debentures for two or more years in sums of \$100 and upwards, bearing interest at highest current rates, payable half yearly by coupons.
Executors and Trustees are authorized by law to invest in debentures of this Company.
For information apply to
206-tf **JOHN A. ROE, Manager.**

DR W. E. WAUGH—Office, The late Dr. Anderson's
Ridout Street, LONDON ONT. 195-f

GRAPE VINES.

Nursery established 27 years. Over 100 varieties. Also Strawberries, Raspberries, Gooseberries, Currants, &c. Prices low. Quality best. Catalogues free. **Geo. W. Campbell,** Delaware, Ohio.

GRAND TRUNK RAILWAY OF CANADA

TRANS-CONTINENTAL ROUTE TO

**MINNESOTA, DAKOTA, MONTANA
MANITOBA AND BRITISH
COLUMBIA.**

PASSENGERS to the rich wheat-producing lands of the Northwest, and the Agricultural and Mining Districts of British Columbia, will find the cheapest and best route via the Grand Trunk Railway of Canada.

THIS IS THE LEGITIMATE ROUTE TO THE NORTH-WEST, affording a continuous trip and making direct connection with the Steamer lines from Sarnia and Collingwood, and by rail through to all points in the North-west, West, and South-west.

THE GRAND TRUNK RAILWAY,

with its powerful and direct connections, and extensive and continuous through line, is THE FAVORITE ROUTE, and can be relied upon. The very best rates will be quoted for freight, passage, live stock, effects, and extra baggage, for emigrants; also for individual emigrants.

It has deservedly gained the reputation of being an exceptionally desirable route for bodies of emigrant settlers. Special attention has been paid to this business, both as regards cars, train service, accommodation en route, and instructions to employees to treat parties and holders of our tickets with courtesy and attention.
Apply for full information to Agents at the Offices of the Grand Trunk Railway.

JAS. STEPHENSON, **JOSEPH HICKSON,**
217-f General Pass. Agent. 457-y General Manager.

**INTERCOLONIAL
RAILWAY**

The Great Canadian Route to and from the Ocean.

For Speed, Comfort and Safety is Unsurpassed.

Pullman Palace, Day and Sleeping Cars on all through Express Trains.

Good Dining Rooms at Convenient Distances.

NO CUSTOM HOUSE EXAMINATION.

Passengers from all points in Canada and the Western States to Great Britain and the Continent should take this route, as hundreds of miles of winter navigation are thereby avoided.

IMPORTERS and EXPORTERS

will find it advantageous to use this route, as it is the quickest in point of time, and the rates are as low as by any other.

Through freight is forwarded by FAST SPECIAL TRAINS, and experience has proved the Intercolonial route to be the quickest for European freight to and from all points in Canada and the Western States.

The Pullman cars which leave Montreal on Monday, Wednesday and Friday, run through to Halifax without change, and those which leave Montreal on Tuesday, Thursday and Saturday run through to St. John, N. E., without change.

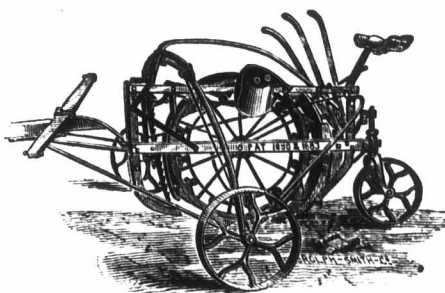
Tickets may be obtained, and also information about the route, and about freight and passenger rates from **R. B. MOODIE,** Western Freight and Passenger Agent, 93 Rossin House Block, York St., Toronto, and **E. DE LAHOKE,** Ticket Agent, No. 3 Masonic Temple, London.

D. POTTINGER,
Chief Superintendent, Moncton, N. B.
Railway Office, Moncton, N. B., 10th December, 1883. 221-tf

Ontario Veterinary College

TEMPERANCE STREET, TORONTO.

The most successful Veterinary Institution in America. All experienced Teachers. Fees, Fifty Dollars per Session. Session 1882-3 begins Oct 25th. Apply to the Principal, **PROF. SMITH,** V. S., Edin., TORONTO, CANADA. 201-f



**DITCHING MACHINE,
FOR UNDERDRAINING.**

Will do more work than 30 men with spades. Guaranteed to give satisfaction. Send for Circular.

WM. RENNIE,
SOLE MANUFACTURER, TORONTO, CANADA. 217-f

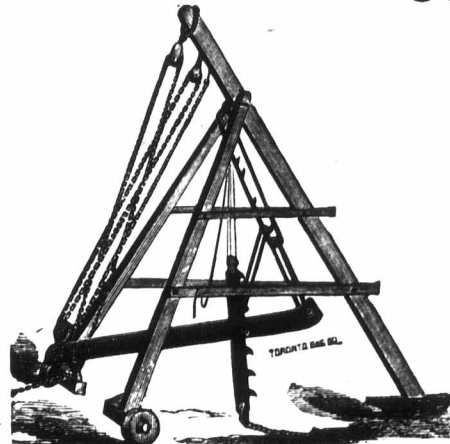
**BROWN'S
PATENT HAY LOADER.**



Since the first introduction of the Hay Loader, each succeeding year has added every evidence of its practicality, and it is now considered one of the greatest labor-saving machines of the age. It requires no extra men or horses, being attached to the rear of the wagon and operated by the same team that draws the load, adding to the draft the power of one man. It will load a ton of hay in five minutes, taking it up as clean as can be done with a fork. Although originally intended to run on hay raked in wind-rows, it may be used in heavy unranked hay, and will work equally as well in all kinds of loose grain, especially barley. For price, testimonials, and all particulars, address

JOHN RUSSELL & CO.
Proprietors, Ingersoll Foundry and Agricultural Works
INGERSOLL, ONT.
Manufacturers of the Ingersoll Reaper, Ingersoll Mower, and all kinds of Agricultural Implements. 218-d

PROCURE THE BEST



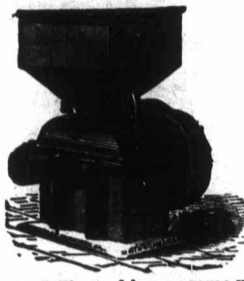
The Whitfield Stump Extractor.

The superiority of this machine consists in the rapidity and ease in which it can take out the largest stumps; the ease with which it is operated by man or beast, and the great strength and durability of this machine. It leaves no holes to fill up, nor any stumps or snags in the ground. Send for circular of testimonials and particulars about it before purchasing an inferior machine

JOHN WHITFIELD,
202-tf Dominion Chain Works, Front Street, Toronto.

AMBER SUGAR CAN
MACHINERY.
NEW PARAGON SCHOOL DESKS.
M. BEATTY & SONS, WELLAND, ONT.
 Early Amber Cane Seed imported from the States. Pure and reliable. Send for catalogues and prices. 219-h

THE NEWELL PATENT UNIVERSAL GRINDER.



Award of Gold and Silver Medals.
Newell & Chapin,
 Proprietors,
 95 Bonaventure St.
 Montreal.

These Mills save time, grind any kind of grain very fast and without heating. Larger size Mills working on same principle with different style of cutter, grinding phosphates, gold and silver ores, quartz, plaster, clay, bones fish-scrap, bark, &c., &c. 210-L

W. & F. P. CURRIE & CO.
 100 Grey Nun St., Montreal,
 MANUFACTURERS OF

SOFA, CHAIR AND BED SPRINGS.
 A LARGE STOCK ALWAYS ON HAND

IMPORTERS OF
 Drain Pipes, Vent Linings, Flue Covers, Fire Bricks, Fire Clay, Portland Cement, Roman Cement, Water Lime, Plaster of Paris, Borax, Whiting, China, Clay, etc. 210-y

TRADE MARK

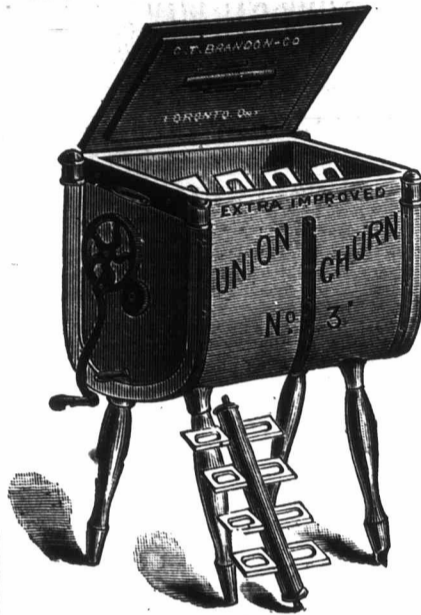
BUY THE GENUINE BELL ORGAN
 made only in Guelph.

IT HAS STOOD THE TEST FOR 20 YEARS.
 Send for our Catalogue. 214-y
WM. BELL & CO.

FARMERS!
 The Canadian
STOCK-RAISERS' JOURNAL,
 PUBLISHED MONTHLY,

Containing 28 pages, is handsomely illustrated, and has met with such signal success and encouragement from the stockmen and farmers that its publishers were compelled to enlarge it twice during the present year. It claims to have no superior in any of its departments of **Stock Raising, the Farm, the Dairy, Poultry, the Apiary, Horticulture and the Home.** Subscription price, \$1.00 per annum. To any person forwarding us 50 cents the Journal will be sent to end of 1884. Canvassers wanted. Liberal pay. Specimen copy sent free.
Stock Journal Co.,
 48 John St. South, Hamilton, Ont.
 214-y

THE EXTRA IMPROVED
UNION CHURN

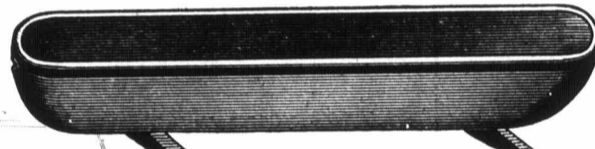


Admitted to be the Best Churn in the World!

Took the following 1st Prizes against all competitors:-
 Hamilton.....1876 and 1881
 London and Quebec.....1877
 Sydney, New South Wales.....1877
 Paris, France.....1878
 Guelph.....1883
 Toronto.....1878, 1879, 1880, 1883

Made in Four Sizes:-
 No. 1.....\$ 8 00 each
 No. 2....." 8 50 "
 No. 3....." 9 00 "
 No. 4....." 11 00 "
 When we have no agents we will forward to your nearest railway station for above prices. Send for circular.

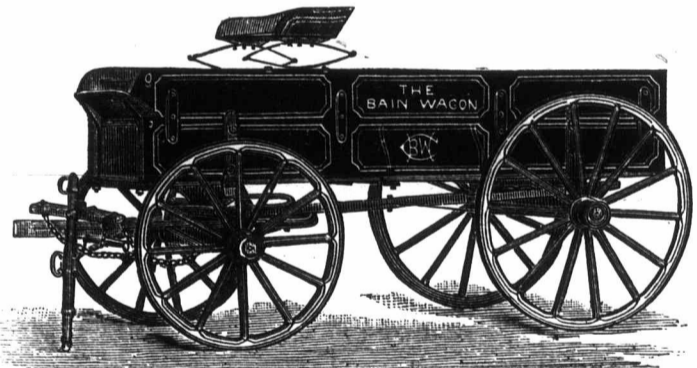
MANUFACTURED ONLY BY
C. T. BRANDON & CO., Toronto
 Manufacturers of all kinds of Wooden Ware.
 221-c



CAST IRON HOG TROUGH. PRICE, \$3.50.
 Made also with Divisions in Trough.

B. G. TISDALE
BRANTFORD STOVE WORKS
BRANTFORD, ONT.
 Only Manufacturer in Canada of a complete line of **IRON STABLE FITTINGS.** Send for illustrated Catalogue and Price List. 214-y

THE BAIN WAGON



IS THE FARMER'S FAVORITE.

Because it is the lightest running wagon made.
Because it is made in the most careful manner, from the best selected seasoned timber.
Because no inferior iron is used, and special attention is paid in ironing it off.
Because the wheels before the tire is put on are thoroughly saturated in boiling linseed oil, which is a sure preventive of loose tires.
Because the patent arms made from our own patterns are superior to those made by other makers.
Because all material used in painting it is of the finest quality, which gives it a superior finish.
Because every wagon is inspected in all its parts by one of the members of the company before being sent out.
Because it is just as represented every time.
Because "The Bain Wagon" is warranted to be well made and of good material, and any breakage occurring with fair usage within one year, by reason of defective material or workmanship, will be made good by any of their agents, upon the purchaser producing the broken or defective parts as evidence.
Agents wanted for every county. Send for descriptive circular and prices to the

BAIN WAGON COMPANY,
Woodstock, Ont.

N. B.—We make a specialty in spring wagons. Prices given on application.
 216-f