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THE FARMER'S ADVOCATE

AND HOME MAGAZINE



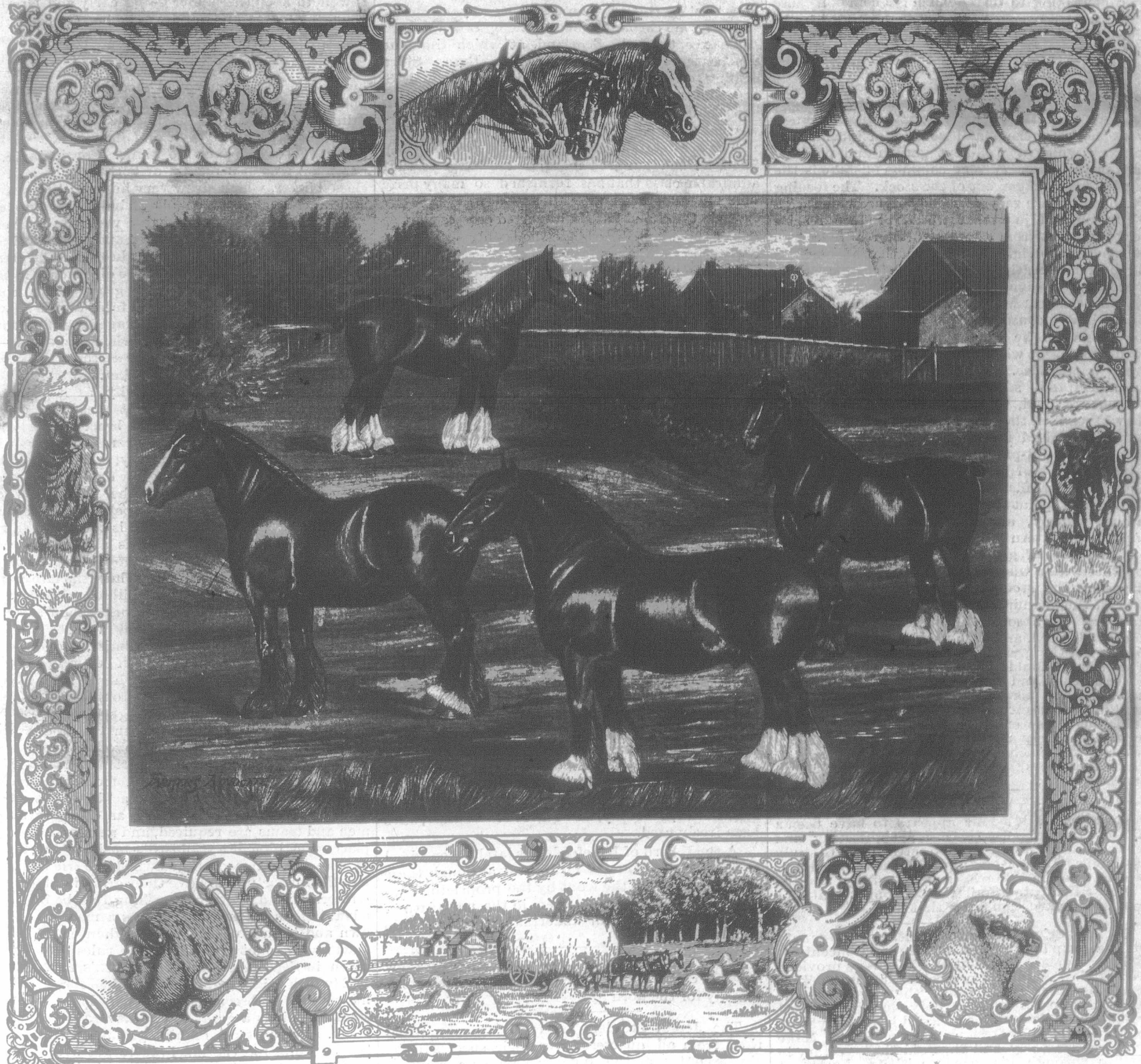
* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE. *

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VOL. IV.

LONDON, ONT., AND WINNIPEG, MAN., SEPTEMBER 5, 1893.

No. 53



A GROUP OF CLYDESDALE HORSES,
THE PROPERTY OF MESSRS. DEVITT & SONS, FLORADALE, ONTARIO.

A Few of the Reasons Why Farmers Fail.

In these days when rigid economy and an understanding of the work is necessary to insure success in agriculture, it is not surprising that so many out of the great class of tillers of the soil fail to get either pleasure or profit from farming. Every neighborhood, whether good or bad, has a few farmers who are always in debt, always struggling to meet their obligations when due, and unable to make necessary improvements. In fact, their lives are made miserable by what they seem to think is a misfortune. But is the trouble the result of misfortune or mismanagement? It may be the former, but we cannot help thinking the latter has much more to do with it. We all know of numerous instances where farmers, often laboring under a disadvantage, have succeeded in raising and educating large families, besides laying by a modest sum for old age.

Many failures that we see cannot be attributed to lack of industry, as many unsuccessful farmers work late and early, and seldom, if ever, take a holiday. It can truthfully be said in almost all instances that failure is caused by the head not guiding the hands. The work is not done systematically as in other business, but managed haphazard, trusting to luck. The farm and markets are not studied; on hilly farms where sheep would do well, this animal is never seen, and grain is grown at a disadvantage and loss. Many similar everyday mistakes may be pointed out which are the result of bad judgment in the line followed.

Undertaking to do too much is a common cause of failure. Too many attempt more than can be properly done, and when hindered by bad weather the work is piled up and not done in season, which always becomes much worse to do and therefore less well accomplished. Short crops are the result both in quality and quantity, which means a light purse. Again, the farmer who attempts too much work neglects the small sources of income and comfort which a well-kept garden and poultry-yard can produce. A very common mistake is the injudicious management of the stock. The feeding and breeding are very carelessly done, which with a caution and judgment would produce results very different from those so often realized. The farmer has no right to complain that his business is not remunerative when he leaves his stock, especially the milking cows, exposed to the inclemencies of winter weather. The farmer should have a conscience that would not allow him to rest when he knows that his stock is not comfortable. A wise management in feeding is of great importance. To this end it is necessary to understand something of the constituent elements of food, and their office in the system. He will see then the folly of stuffing growing colts, which are raised for muscle and endurance, with corn or other fat-producing foods, and not allow cattle to lose half the flesh they have gained in summer by insufficient food and shelter in winter.

We will point to one more of the causes of failure, namely, allowing the soil to become impoverished. An intelligent rotation is one of the best methods of getting all that can be produced, together with a wise use of fertilizers at a farmer's disposal. The stock should be managed so as to save all the manure, both liquid and solid, using straw as an absorbent, as well as to make a comfortable bed, and then use this manure wisely so as to get the greatest profit from it. No source of fertility should be neglected. The grass and clover acreage and the amount of stock should be increased, and acreage under plow decreased, in a great many instances. Many more causes might be cited, but these enumerated will suffice for the present, and they are directly within the farmer's own control, which, of course, may not be said of all circumstances that militate against the farmer's success.

The attempt to hold lectures on practical dairy work at the World's Fair appears to have been a failure. People were there for sightseeing, and could hardly be expected to settle down to study the details of butter-making. The travelling dairy, as conducted in Ontario so successfully, and the Farmer's Institute afford the best opportunity for imparting instruction along that line.

Do not neglect the local exhibitions—the county and township fall fairs. They are great incentives to improvement. See that all the classes provided are well-filled. Do not neglect fitting up stock or arranging other exhibits till "the day before the fair." Take pains to select only the very choicest fruits, vegetables, grains, etc., and have everything arranged in the neatest possible package. Make your entries early and thus aid the secretary in getting through his work without hurry or confusion. In case they should be required, have pedigree certificates of stock at hand.

Messrs. Devitt & Sons' Clydesdales.

The group of draft horses which are portrayed on the front page of this issue are representatives of the stud of Clydesdale horses owned by Messrs. Isaac Devitt & Sons, Floradale, Ont., which is situated about four miles from Elmira, the terminus of a branch of the G. T. R., and is in one of the most fertile and best farmed sections of the County of Waterloo, where fine horses, choice cattle and improved stock of all descriptions have for many years been in demand.

The stallion in the foreground of the illustration is Douglas McPherson, sired by the Macgregor horse Macpherson, always considered to be among the best breeding horses of his day in Scotland. Douglas McPherson is a massively built horse, with a nicely turned top and equally good at the ground, as he stands upon the best of wearing feet. He has had the honor of winning in the best company. After carrying first prize at local shows and Toronto Industrial as a foal he was not again exhibited until he came to his three-year-old form, at which time he won first at a number of shows in the adjoining counties, also winning first in his class as a three-year-old at the Industrial, Toronto. His dam, Bell, who appears to the right in the illustration, was sired by the Darnley horse, Good Hope, her dam being Mall (6267), by Lochiel (450). Bell is not only a well-bred, but is a wonderfully good mare. She is built on the largest scale and is very smooth and handsome, and is doubtless one of the best mares now breeding in Ontario, which is borne out by the very successful show yard career she has gone through, never having taken second place except once in Scotland, at which time she was beaten by that noted mare Moss Rose. Since coming to Canada she won first in a team in 1888, also winning the Clydesdale Association prize for the best draft mare any breed or age. In 1889 she won first as a mare with foal by her side.

The next standing to the left is Isabella (451). She is a Canadian-bred mare, and belongs to that admirable class that has furnished so many prize winners at our shows. Isabella was sired by Ontario Chief and has six imported crosses, but as one of them is a Shire horse she is only entitled to register in the Canadian Draft Horse Stud Book. This mare won second in her class in 1880 at the Toronto Industrial, and again won second as a brood mare at the same show in 1892, and has also beaten a number of the best imported mares at local shows.

The yearling filly in the background was sired by Douglas McPherson, and is one of a number of good ones sired by this horse. Her dam is Lady MacArthur, sired by the Macgregor horse Mac Arthur, and is decidedly one of the most promising things on the farm, proving that Douglas McPherson may be accounted a great success in the stud, which we would expect by analyzing his blood lines.

There are at present thirteen Clydesdales in the stud, and it has evidently been the aim of the proprietors to breed for size, in which particular all their horses excel, they very properly contending that this is the most necessary qualification in the draft horse; and while they have kept this point pre-eminently in view, they have not lost sight of such essentials as beauty of form and quality, while, at the same time, good feet and clean, dense bone, and other useful characteristics, have always received due consideration. The Messrs. Devitt have paid every attention to breeding in popular lines, and have spared neither trouble nor expense in placing the most desirable crosses upon their brood mares. In scanning the pedigrees we find a host of familiar names of the most noted prize-winning stallions in past years, and such good ones as Boydston Boy, Lord Lyon, Duke of Flemington, MacArthur, MacClay, and others of this class, have been freely used.

A small herd of Herefords has lately been added to the live stock on the farm, and although these are not pushed to the front by the proprietors, we shall expect to hear from them in the near future, as whatever this firm undertakes to do they do well.

Many farmers report finding fish oil, with a few drops of carbolic acid added, the most satisfactory remedy for the horn fly.

The Jersey breeders are receiving congratulations from all quarters over their success in the cheese contest at the World's Fair, as announced in last month's ADVOCATE. The results of other tests will be given as completed from time to time.

Prize Essay on Harvesting.

BY M. WATTS, CARTWRIGHT, MAN.

It is impossible to give a single method that is suitable for all conditions. Whatever method the farmer chooses he must be ready to modify and adapt to circumstances. One of the first things to be done is to give his binder an overhauling; see if it needs any repairs, and give it a good cleaning; if it is rusty or clogged with old, dried-up oil, a good application of coal oil will clean it. Next lay in a supply of necessaries, sufficient to do until after harvest; do not be stingy, either, as it is very trying on your good wife (if you have any) to get comfortable meals without a good stock of groceries. It is good economy of time and strength to rise an hour or two earlier than usual (unless you are an earlier riser than most of Manitoba farmers), and take a long noon rest in the hottest part of the day; the horses work better with less fatigue in the morning and evening. Again, don't neglect your bath and the changing of damp, sweaty garments (I know farmers are generally careless in such matters); anything conducive to health and comfort is time well spent. Another important item is good, plain, digestible food, suitable for the hot weather, including fruits, salads, vegetables, a good supply of milk and cream; lemons or oatmeal in the water make a safe and excellent drink; buttermilk is also good. Aside from personal comfort, the man who has things comfortable can get help when men who give poor fare cannot. If you have two teams, it is well to keep the binder going early and late by changing teams and hands. The best twine is the cheapest, as it goes further and works with more satisfaction. If your binder did poor work last year you had better get a new one, as the crops are heavy this year; improved machinery saves time and labor, and may save the crop from damage by rain and frost by handling it quickly. You should be supplied with "grit, get and gumption." "Grit" and "get" will never do alone. For instance, a neighbor who has plenty of both bought a first-class binder, which drew very heavily; he fretted and fumed and lost a couple of half days running after the machine agent, who, when he arrived, found he had forgotten to oil it, and some parts of the machine were almost worn through. The great secret of light running is, a little oil often. It has been proven the best sample of grain comes from grain cut on the green side, as it feeds on the heavy straw and ripens without shrinkage, as at first supposed. By using the sheaf-carriers and dropping the right number of sheaves for a stook, the work will be much easier for the stoker. Do not make large stooks or cap them heavily, as it prevents them drying out quickly. Slant the sheaves well from the bottom and they will brace against the wind better. If after wind or rain sheaves are blown down, set them up quickly; it will have to be done some time, or they will grow on damp ground. It is frequently the case in the latter part of harvest that we have a wet spell, so it is a bad policy to wait until all the grain is cut before starting to stack; the early grain is always the best sample, and why run any risk of spoiling what is ready, for fear that the frost will hurt the late crop? Better pay a smaller threshing bill for good sample that will bring a much higher price than a large bill for damp, musty, sprouted wheat. Barley should be cut if possible with a binder, and harvested quickly to preserve its color; if cut with a mowing machine, and raked with a horse rake which leaves a large portion on the ground, the sample will not be as clear, nor will it weigh as well. Throw out any very weedy sheaves when stacking, as the weeds are only wilted. Reserve some of your best grain to your fall fair. Experience has taught many it is a mistake to thresh from the stook; although it may save work stacking, it is more than made up when threshing, as so many more men and teams are required, and a shower of rain places everything at a standstill, causing a great loss of time and patience. Some who have tried it have had the misfortune to have their grain in stook all winter. The only way threshing can be done to advantage is when a farmer has a machine of his own and is sure of extra help when needed. In stacking I cannot give any better rules than were given in September No. of FARMER'S ADVOCATE, 1892 (which might again be published for the benefit of new subscribers):—Always have a good stacker, as it is a great loss to have a loose, leaky stack. Always stack on high ground, with no low bad crossing for the machine to get over in wet muddy weather. Do not stack on stubble or any place you wish to plow next year, as you will of necessity burn the straw, which is wilful waste. We

should always have a year of straw ahead, lest we have a year of scarcity such as we had a few years ago, when people drew old straw miles and quarrelled about who would have it. Again, a few extra hands would stack some of the best straw. Stock relish oat straw, enjoying a change of diet as well as man, and there is no excuse for such dirty stables and pig pens as we often see while good straw is being burnt or buried in the snow, which might be converted into manure. Some recommend the mixing of straw with green hay, thereby making the latter go farther, and as it imparts its aroma to the straw the stock eat it with apparent relish. Thrash as soon as possible, as the days begin to get short, and prices are nearly always best at the opening of the season. Those who have enough to fill a car early in the fall from the machine have had best satisfaction, but it is not always convenient to get hands and teams; in any case it is necessary to have granary in order, bins and partitions tight, roof and walls rain and snow-proof; have plenty of good bags, and everything ready that your good sense would dictate.

Frauds in Seed Grain.

Farmers should be careful that the seedsmen and others from whom they purchase grain are thoroughly reliable. During the past few years we have heard of several disgraceful incidents where farmers have been imposed upon by salesmen who sold them common varieties, representing such to be a new and highly priced sort. In other words, the salesman substituted one sort for another. The farmer ordered a high-priced kind, the salesman supplied him an old and cheap variety, knowing it to be such. Not long ago Mr. Frank Shore ordered a new white wheat from a certain house, paying a high price therefor. In a few days he received what was represented to be the sort he ordered, but what was in reality an entirely different kind, not a new wheat nor a high-priced one, but simply a substitute which was represented to be the high-priced variety ordered. Mr. Shore, being an expert, detected the fraud at once, but he failed to get the sort ordered nor was his money returned. Another case which came under our notice was that of Mr. G. W. Monk, M. P. P., Carleton Co., who ordered three or four promising wheats. All were sown in one field. The next year one of our staff visited his farm and found but one variety true to name, and it was badly mixed. We believe this dishonorable method of doing business is practised to a considerable extent, not alone with fall wheats, but more largely with other grains and seeds. Farmers are thus victimized every year. If this treachery was only the theft of the cash which represents the difference in the value of the sort ordered and the one sent, the loss to the farmer would not be so great, but the trouble does not end there. The value of the test which the buyer wished to conduct is entirely lost, and if an undesirable sort was substituted, the crop is lost also. A great many farmers in Ontario during the last two or three years have lost their rape crop, because a worthless variety was sold to them for the true sort. The crops thus lost varied in area from a few acres up to twenty or more. Not only did these men lose two crops, but their land was filled with the seeds of a weed little better than wild mustard. The following letters bearing on this point have just been received by us:

DEAR SIRS,—I do not know of any new varieties of fall wheat, but I believe purchasers and farmers are duped by seedsmen and sharpers placing old varieties on the market under assumed names. The time has come when a means to prevent it should be sought for. I think your plan a desirable one of publishing all such information as you can obtain from reliable sources.

G. R. BRADLEY, Manotick, Ont.

DEAR SIRS,—Very little fall wheat is sown and only of old varieties in this vicinity. The few patches that are sown promise fairly well. I am beginning to think that some of our seedsmen are not doing the right thing in other seeds, as I order a great deal every spring for farmers and find old varieties sent under new names, some of them worthless. I think if Patrons take this matter up they can force just conditions. I am glad to see you speak favorably of the Patrons, and if they only wield it well, this movement will be one of their best weapons for defence. Hay is a good crop here. Other crops look fair all through.

Yours very truly,

JAMES H. ESDTON, Curry Hill, Ont.

Before ordering new sorts of grain or other seeds the buyer should study the appearance of the variety, so as to know it at sight when this is possible. Demand the sort ordered and accept no other. We have a number of reliable seedsmen in Canada, whose description of varieties can be relied upon. In all cases, deal with a reliable house, and remember the men who deal in good and honest seed cannot and will not compete in price with the sharpers who make their money by fleecing their customers, nor can men who deal only in good goods well cleaned, sell as cheaply as the men who buy and sell only cheap and inferior stuff. At the request of a reader, we shall be pleased to carefully describe any sort of seed grain at any time. We desire our readers promptly to report to us any cases of substitution or other frauds in supplying seed grain, stock or other goods.

Manitoba Cheese for Chicago.

The President of the Manitoba Dairy Association announces that special arrangements have been made for a Manitoba dairy display at the World's Fair in October. The plan arranged for sending forward exhibits is as follows:—

Class 1—Cheddar cheese—Any factory may send one cheese, diameter not less than 14, nor more than 16 inches, height not less than 9 inches, weight not less than 50 pounds.

Class 2—Cheddar home trade—Exhibit to consist of one cheese, not less than 6 inches in height, not less than 12 nor more than 15 inches in diameter.

BUTTER.

Class 1—Dairy butter made by exhibitor on the farm, from a mixed herd—Exhibit to consist of not more than one package, weight to be not less than 10, nor more than 20 pounds.

Class 2—Dairy butter, made by exhibitor on the farm, from a herd of one breed—Exhibit to consist of one package, weight not less than 10, nor more than 20 pounds.

Class 4—Creamery butter, made by exhibitor, from the milk of mixed herds, from cream separated from the milk in the creamery where the butter is made—Exhibit to consist of one commercial package, to weigh not less than 55 pounds.

Class 5—Creamery butter made by exhibitor from gathered cream. Exhibit to consist of one commercial package, to weigh not less than 55 pounds.

The Dominion Government are to pay freight charges to Chicago and return, as well as the cost of caring for the exhibit during the exhibition, and until it is disposed of afterwards. The government will make payment on account to the several exhibitors of dairy products to nearly the full market value.

The butter and cheese for exhibition are to be shipped addressed to the Dairy Commissioners, care of S. M. Barre, 249 King street, Winnipeg, no later than September 20th, when the whole exhibit will at once be forwarded to Chicago.

A bulletin of detailed information, label and entry form, may be obtained free on application to the Dairy Commissioner, Ottawa, or to the President of the Manitoba Dairy Association, Winnipeg. A number of entries have already been secured, and it is hoped farmers and factory men will turn out in good number, so as to send a creditable exhibit from this province.

Melita Summer Fair.

The seventh annual exhibition of the Souris River Agricultural Society was held on the 3rd and 4th of August at the enterprising town of Melita. The extreme heat prevailing at the time was quite a disadvantage, as stock at a distance could not well be brought that would no doubt otherwise have been there. Among that shown there were some good animals in the different classes, which fact suggests to the careful observer that stock, in the near future, is to play a more important part in the agriculture of this magnificent district, so well adapted for mixed farming. This section being so thoroughly watered and otherwise well adapted for dairying, it should excel in this industry when once attention is turned in this direction. We are pleased to see that the "Ayrshire" has been introduced here, and is represented by some very good individuals owned by Mr. G. L. Dodds, and we understand others in this section have made a start in the same breed, but as the society offered no prizes for this sort none were shown. This is certainly a mistake, as every breed owned in any locality should receive equal encouragement from local fairs. Space will not admit of special mention of all the exhibits.

There were some good horses and cattle. One fat steer owned by Mr. A. Thompson weighed 2,280 pounds, while a two-year-old Shorthorn bull of good form, owned by R. J. Dobbyn, weighed 1,930 pounds.

Some fine sheep were shown by J. Murray, of Lyleton, whose flock, although not yet numerous, is of good quality. The majority of the prizes for swine were awarded to J. A. Ross and G. L. Dodds, and were about equally divided. Their Berkshires are well bred, being the descendants of stock from Mr. Snell, and we understand both parties have been very successful in this line.

The grains and grasses contained some splendid samples. That in straw gave an idea of the splendid growth and fertile soil of this locality. The white oats in sheaf awarded first prize (American Banner) were grown by Mr. Dodds on virgin soil without manure. We mention this to show that all crops may be expected where proper cultivation has been bestowed from the first.

Some very good poultry in sufficient quantity to attract attention were exhibited. The ladies department, which always adds so much to the interest, and is composed of so many articles, both useful and ornamental, kept pace with the other sections, and exhibited the taste and neatness of their handiwork in a highly commendable manner.

The effort now being made by or on behalf of British farmers to get back the home market for butter will unquestionably have a marked influence on the future of cattle breeding in that country. There is already a decided reaction in favor of dairy cattle as distinct from those that practically produce nothing but beef. A class had to be provided for Jerseys at the Highland Show this season for the first time in its history.

Timely Notes for September—No. 1.

"AN ILL WIND THAT BLOWS ETC."

The industrial collapse in the U. S. will prove in one way an indirect good to the Manitoba and Northwest farmers this harvest. Many of our young men have been in the habit of going to Dakota, Montana and Minnesota every harvest on account of the higher wages there given, and in consequence the Northwest farmers have often been handicapped for men, and have been compelled to pay altogether too high wages for what help they could get. This season they have too many men down there, and are sending many up here; as a consequence we can get men in plenty and at lower wages, and we shall be thus able to reap our crops and get our fall work done more expeditiously. Again, on account of the surplus of idle men in the town there will be lower wages in the mills and factories, and there won't be the same inducement to leave the farm; the inducement will be rather the other way, and thus Manitoba, a farming country, will be benefitted. It will also open the eyes of a great many to the advantages of their own fair country of Canada, where life and property are safe and where the law is enforced.

"A land of settled government,
A land of old and just renown,
When freedom gradually broadens down
From precedent to precedent."

AN OBJECT LESSON IN FEEDING.

One of the best lessons to be learned from the late Industrial Exhibition in Winnipeg was obtained from the "fat cattle" exhibit. The steers as examples of early maturity and development were fine animals, and when two-year-olds can come to 1,700 pounds and over, it shows what every one is losing who is growing steers of 700 and 800 pounds in three years; and then these small fellows eat nearly as much as those big chaps, and they break ever so many more fences, are wilder, harder to sell, and an eye-sore, and a dead loss in money. Take it in a financial point, thus:—

Grade steer roughly would cost:
Service of pure-bred bull, say.....\$ 2 00
Milk and grain for first year, say.....5 00
Hay and grain second year.....10 00

Pasture free. Total.....\$17 00

The scrub steer would cost:
Service of common bull (if paid for at all).....\$ 0 50
Milk and grain for first year, say.....3 00
Hay and grain for second year.....10 00

Pasture free. Total.....\$11 50

In one case you have a beast weighing from 1,400 to 1,700 pounds, and in the other only 600 or 700 pounds; the first would sell for 4 cents a pound easily, and the other be a slow sale at 2½ or 2¢ cents. How much longer will you go on raising those small cattle?

GENERAL.

Leave the grain standing a little while longer than usual, as, owing to the wet season we have had this year, there is more straw and more sap in it, consequently will take longer to dry. For the same reason threshing from the shock will be more hazardous than in a drier season. I don't believe there is any economy in threshing from the shock in the long run.

You may just as well take up the potatoes as soon as they are ripe. They won't grow any more, and are safer in the pit or cellar than out in the field. If heavy rains or a severe frost should come, a good many tubers would be spoiled.

Feed some of those white turnips to the cows now the grass is getting dry, and keep up the flow of milk. It hardly pays to store away the white turnips, but swedes and mangels should be pitted or put in the root house towards the end of the month, unless the weather continues fine, when they should be left out, especially the swedes, until hard weather comes on.

Fatten up your hens and young roosters before selling. Don't sell lean stock, it never pays. Begin the culling out process early. Don't keep any that are late in moulting, they will probably die in the winter.

How many stallions were registered with the government this year, so as to compel payment of service fees? If the owners, after neglecting the help thus placed within reach by the government, fail in collecting their fees, they will have themselves to blame.

Can any one suggest a good bait for wolves in a thickly settled district, that is not dangerous to farm stock? I have tried various plans, but apparently to no effect. "INVICTA"

"Canada's fruit exhibit at the World's Fair in Ontario makes the finest showing: superior exhibits.—To most visitors at the World's Fair it is a perfect surprise to find that Canada has one of the largest fruit exhibits in the Horticultural building. It is situated in the rear curtain, north of the Dome, and occupies nearly one-sixth of the whole space devoted to pomology. In variety of fruits Canada also excels."—Orange Judd Farmer.

Our Scottish Letter.

The leading feature of the female Clydesdale classes at Aberdeen was the superiority of the stock got by Messrs. P. & W. Crawford's solid big horse, Darnley's Hero. He was sire of the first prize brood mare, and the first two-year-old filly, both of them really first-class animals. The brood mare is owned by Mr. John Sleigh, Jr., Mains of Strichen, and was bred by Mr. James Lockhart, Mains of Airies, out of the dam of the Balmedie Royalist, Darnley's Last, and Sir James Duke's Winetti. The Strichen mare, Queen of Hearts, as she is named, will take a position among the best of them, being wonderfully sweet and evenly balanced. The first two-year-old filly is a mare of rare quality, owned by Messrs. Cocker, Hill of Petty, Fyvie. She has since been purchased by Mr. W. Park, Brunstane, Portobello, and is one that promises well for the future. The Balmedie stud furnished the first three-year-old and the first yearling filly in Queenie Flashwood and My Lady respectively. Both are mares which should do good service in the future as breeding stock. Mr. George Bean has an excellent stud at Balquhain Mains, Pitcaple, which provides some of the best prize-winners at the Aberdeen shows. Mr. Bean is one of the best judges of Clydesdales in Aberdeen, and he has always something better than the average to be reckoned with in the show-ring. This season was no exception; Balquhain furnished as many good exhibits at Aberdeen Jubilee show as any other stud in the north, with the possible exception of Balmedie.

The Edinburgh show of the H. and A. Society has now been held, and it is undoubted that no such collection of stock peculiar to North Britain has been seen in the show-ring for a long time. The show has been a great success financially, the attendance having been greater than at any show held for a number of years—indeed, since the centenary show of 1884. The great trophy of the exhibition was the three cups presented by His Royal Highness, the Duke of York, K. G., for the exhibitors gaining the greatest number of points for horses, cattle and sheep respectively. The cup for cattle was won by Mr. Leonard Pilkington, Cavens, Kirkbean; that for horses by Mr. John Gilmour, of Montrave, Leven, Fifeshire, and that for sheep by Mr. David Buttar, Corston, Coupar-Angus. Mr. Pilkington's cattle exhibits were wholly Ayrshires and Galloways. The exhibitor who ran him closest was Mr. Thomas Valentine Smith, Ardnornish, Morvern, Argyleshire, whose exhibits were wholly West Highlanders. He had actually as many points as Mr. Pilkington, but the latter gained most first prizes, hence he was declared the winner. Mr. Gilmour's chief opponent was the Marquis of Londonderry, who gained numerous prizes for Shetland ponies, of which he is the most extensive breeder in Great Britain. He also gained first prize for a two-year-old Clydesdale colt named Holyrood, got by Gallant Prince out of the prize mare, Jeanie Darnley. Mr. Buttar is a leading breeder of Shropshire sheep in Scotland, but not the first. He has, however, been their keenest exhibitor and all his exhibits this year were Shropshires. There was heavier competition than we have ever seen at a show of the Highland, but it was nothing like so keen as in the classes for native breeds, such as the Blackfaced and Border Leicesters. Mr. Howatson, of Elenburg, the well-known breeder of Blackfaced sheep, ran a neck-and-neck race with Mr. Buttar, but he had not as many first prizes as the latter gentleman, having more formidable opponents to face.

Shorthorns were generally admitted to be the best show of the breed seen at the Highland for many years. There was pretty keen rivalry between the patrons of the Aberdeen-bred cattle and the Booth cattle, and it was understood that of the two judges one favored the former and the other the latter. However, on the whole the northern-bred cattle came best through the conflict, although for the Tweeddale gold medal championship it was a tie between the famous "New Year's Gift," owned by the Earl of Feversham, and bred by Lord Lovat, and Mr. W. Graham's "Fairy King" from Edengrove, a Booth bull bred by the Duke of Northumberland at Alnwick castle. Mr. John Crau, Kirkton, Bunebrew, a well-known patron of Aberdeen-Angus cattle, was called in to decide and made the award in favor of New Year's Gift. The second prize aged bull, Her Majesty's Fairfax, was only a very little behind New Year's Gift. He also is what is generally known as an Aberdeen-bred one. Lord Boycott, a Booth bull, was third.

The English-bred bulls had the best of it in the two-year-old class, with Fairy King as their leader, the third and fourth being Aberdeen bulls; but in yearling class the north again was at the top, the Earl Rosebery being first with Sittyton Seal, the highest-priced youngster at the Collynie sale last year. In the female classes for aged cows Lord Brougham and Van got first and second prizes with Booth-bred ones; but in the class of two-year-old heifers was found what was regarded as the best female exhibited—Mr. George Harrison's Warfare, bred by Mr. S. Campbell, Kinellar, Blackburn. She was first at Newcastle, and is capable of doing signal warfare for the northern cattle on many a battlefield. Her Majesty was second with Bouquet, a daughter of New Year's Gift, the latter having been in Her Majesty's pos-

session, and sold at her sale in 1892 for 1,000 gs. Booth blood, as represented in the herds of Lord Polwarth and Mr. Thompson, Inglewood, had the best of the prizes in the yearling class. Mr. Thompson's herd, however, is not recognized as so distinctively composed of Booth blood as Lord Polwarth's.

In the classes for Aberdeen-Angus cattle the Ballindalloch representatives were in great force. Mr. Bolden was first in the aged bull class with Esmond of Ballindalloch, but Sir Macpherson Grant's own bull Eltham, the two-year-old, beat him for the championship. Mr. Grant, Mains of Advie, showed some excellent stock, got from other than blood usually identified with Ballindalloch. His fourth aged bull, Rustler, is an animal of grand scale, and was well brought out. The Earl of Rosebery also exhibited some admirable stock, and got second prize in the two-year-old class with Marquis of Moray 6387. Mr. Whyte, Spott, Kirriemuir, showed superior stock, and in the cow classes Mr. Arthur Egginton, South Ella, Hull, was first, and secured the championship with Equality, a beautiful cow—indeed a model. She was bred at Ballindalloch, and is a choice animal if not very big. Mr. John Grant was second with his famous prize-winning cow Ladybird. Mr. Geo. Smith Grant, of Anchorachan, with Legend, Miss Morrison Duncan, of Naughton, with Elena of Naughton, and Sir George Macpherson Grant, Bart., with Gentian of Ballindalloch, were first prize winners in the various classes.

The leading prizes in the Galloway section were gained by Mr. Leonard Pilkington, with the bulls Henry of Tarbreoch and Cedric 2nd of Tarbreoch, and Mr. W. Parkin-Moore, Whitehall, Mealsgate, with Macdougall 3rd of Tarbreoch—a wonderful record for animals bred by Mr. James Cunningham, and possibly never surpassed. In the female classes Mr. Pilkington was first with Tidy 5th of Drumlaug; and Sir Robert Jardine, Bart., both with Lady Vaudeville of Castlemilk and Mable of Castlemilk.

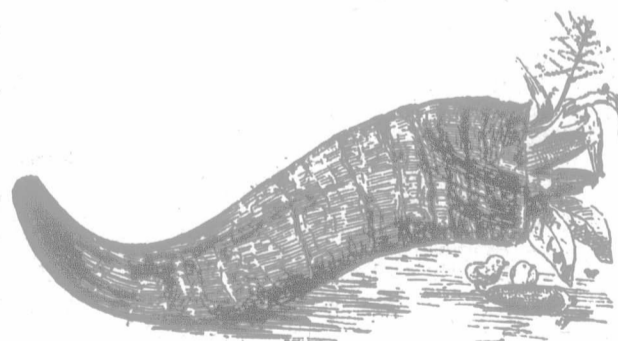
The premiums for the Highlanders, as I have already stated, went chiefly to Mr. Valentine Smith, of Ardnornish, but Mr. I. R. Campbell, Shinniss Lairg, secured a very fair share of the money also. Ayrshires were a better show than has been seen at the Highland for many years. The owner and breeder of the champion bull, Duke of Mauchline, was Mr. Hugh Drummond, Craighead, Mauchline; and of the champion cow Mayflower 3rd, Mr. Robert Wilson, Mansurals, Bridge of Weir. Other winners of first prizes were Messrs. R. Osborne, Wynholm, Lockerbie, with the aged bull Cockie Leekie; and Mr. Pilkington, with the yearling Field Marshal. Mr. Alex. Cross, of Knockdor, had the first prize cow in calf, Beauty of Holehouse 6376; Mr. Robert Wardrop, Garlaff, New Cumnock, the first two-year-old, Lady Diana; Mr. Pilkington, the first yearling, Braw Lass.

For the first time in its history there was a really good display of Jersey cattle at the Highland. The prize money was chiefly subscribed by Major Wardlaw Ramsay, of Whitehill, and some friends.

The salient features of the sheep classes, in addition to the supremacy of Glenbuck amongst the Blackfaces, and Mr. Buttar with the Shropshires, were the success of Mr. Jack's flock at Crichton Mains in the Border Leicester section, and the Hindthrope flocks with the Cheviots. Messrs. Cadzow, Borland, Biggar, had great credit in the Blackfaced classes with some of their young animals, which were undoubtedly exceptionally good representatives. The Duke of Argyll has also a choice flock at Ballymenach, largely drawn from Overshiels stock—a famous fountain-head of much, if not, indeed, all the meritorious Blackfaced flocks. Our notes on the horses must be reserved until next issue.

SCOTLAND YET.

Dehorning.



Prof. I. P. Roberts, of Cornell University Experiment Station, ornaments the cover of his last bulletin with the above illustration, the idea of which is that the farmer by dispensing with the horns of his cattle will come into possession of a "horn of plenty." This bulletin says:—

"The practice of removing the horns from cattle was first publicly advocated by H. H. Haaf, of Illinois, about 1885 or 1886, and since that time has come to be extensively practiced in all parts of the country. It has been found to be of great practical utility in rendering animals more docile and quiet, in rendering them much less capable of injuring each other or mankind, and in reducing the space necessary for safe housing and shipping. The operation, though somewhat severe, has been found to be a very safe one, usually leading to little or no functional derangement, and not followed by severe pain or profuse hemorrhage."

The result of the Ontario Commission is given, and a recital of litigation on account of alleged cruelty, of which the following is a summary:—

"In the United States, so far as we have been able to learn, all trials upon charges of cruelty to animals by dehorning have resulted in the acquittal of the accused parties.

"In Canada at least two trials resulted in the acquittal of the accused, but in a third trial the conviction of the parties resulted in the appointment of a Government Commission which made a report strongly recommending the practice and urging the passage of the necessary legislation to give it effect.

"In Great Britain there have been decisions on both sides, those in Ireland and Scotland being in favor of the legality of the practice, and those in England, notably that of Lord Chief Justice Coleridge and Mr. Justice Hawkins, against. Of twenty judges of higher courts who have passed upon the subject, sixteen declared the practice to be legal, while four pronounced it illegal."

As many prefer to prevent the horns from growing to sawing them off, experiments with chemical dehorning were conducted under the direction of James Law, Professor of Veterinary Science, five calves being selected for the purpose. Caustic potash was found the most effectual means, and was used exclusively in subsequent experiments. Since the first trials the horns on seven other calves were successfully prevented by a single application to each horn, but in no case was the application made when the calves were more than one month old.



FIG. 1.

Fig. 1 is the head of calf No. 1; growth of horns destroyed by caustic potash paste.

Fig. 2 is the head of calf No. 2; left horn destroyed by sulphuric acid mixed with sulphur.

Fig. 3 is the head of a calf with horns destroyed by stick caustic potash applied in small quantity to the embryo horn early in life.

The results of all the experiments made at this station lead us to believe that the use of caustic potash is by far the easiest, most humane and most certain method of securing hornless cattle. The best time to apply preventive reagents is early in the life of the animal, just as soon as the



FIG. 2.

little horns can be distinguished by the touch. The manner of applying caustic potash * is as follows:—

The hair should be closely clipped from the skin and the little horn moistened with water to which soap or a few drops of ammonia have been added to dissolve

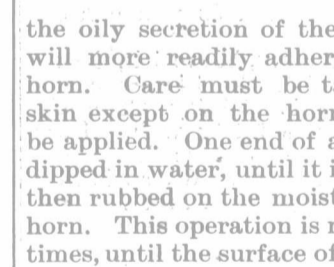


FIG. 3.

the oily secretion of the skin, so that the potash will more readily adhere to the surface of the horn. Care must be taken not to moisten the skin except on the horn where the potash is to be applied. One end of a stick of caustic potash is dipped in water, until it is slightly softened. It is then rubbed on the moistened surface of the little horn. This operation is repeated from five to eight times, until the surface of the horn becomes slightly sensitive. The whole operation need take only a few minutes, and the calf is apparently insensible to it. A slight scab forms over the surface of the budding horn and drops off in the course of a month or six weeks, leaving a perfectly smooth poll. No inflammation or suppuration has taken place in any of the trials we have made. The results of these experiments warrant the following recommendations:—

1. That for efficiency, cheapness, and ease of application, stick caustic potash can be safely recommended for preventing the growth of horns.
2. The earlier the application is made in the life of the calf, the better.

As a great many patented chemical dehorning are now being sold, one of them, sold at \$1 per bottle, was analyzed, and proved to be a solution of caustic soda and water, costing in all about 1½ cents per bottle! It would prevent the horns from growing, but the price was outrageous.

*Caustic potash comes in the form of round sticks about the size of a lead pencil. It may be had at any drug store, and should be kept from exposure to the air, as it rapidly absorbs moisture.

THE FARMER'S ADVOCATE & HOME MAGAZINE

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Everyone interested in dairying should not only read, but study that instructive little book, "Dairying for Profit or the Poor Man's Cow," which may be obtained from the author, Mrs. E. M. Jones, Brockville, Ont. Price, 30 cents. Over 62,000 copies have been sold, and in order to further stimulate its circulation, we will give two copies to every old subscriber sending in his own name (renewal) and that of one new yearly subscriber accompanied by two dollars.

The Norfolk Agricultural Society is offering \$15.00 in five prizes for gopher tails. The competition is not limited to the members of the society; any person may compete without paying the membership fee. The little boys of town and country have a chance to make pocket money by snaring the frisky little gophers and saving their tails. This seems like a good scheme, and might be adopted by all agricultural societies where the gopher pest prevails.

Our Cattle Trade.

The continued slaughtering of Canadian cattle at British ports is a slanderous reproach to the herds of the Dominion. Apart from the financial damage, which is its direct result, the farmers and stockmen of Canada are in no mood to allow this libel to rest as it does at present. The disputations in Great Britain as to what the veterinary inspectors there really discovered in the lungs examined, and which they reported to disclose contagious pleuro-pneumonia, have led many to conclude that the deposits were simply of fibrinous material consolidated after an ordinary case of "sporadic pneumonia," or inflammation of the lungs, caused by exposure. We are in a position to state that in a letter to a friend in this country, Dr. S. T. Brown, veterinary surgeon to the Privy Council Board of Agriculture, England, makes the very important admission that he has never said that the disease exists in Canada. As indicated by the letter of the Deputy Minister of Agriculture at Ottawa, given below, every part of Canada was searched by a staff of veterinary officers without finding any trace of the disease; there being no cases here, obviously none could go forward and none could be discovered by the British vets. Shippers and others report this season's trade to have been hopelessly demoralized; and the outlook not improving and everything being in a state of uncertainty, there is already a strong disposition in various quarters to abandon cattle feeding.

With regard to the inspection of our cattle on landing in Britain, we are able to say that Mr. Wm. Hunting, M.R.C.V.S., veterinary surgeon, has been appointed chief inspector under the Contagious Diseases Animals Act to receive the Canadian cattle. Concerning him Dr. Mole, M.R.S.V.S., of Toronto, writes us:—"He is well known as a thoroughly expert veterinarian, and Canadian cattle exporters may feel assured of his fairness and impartiality. His scientific attainments are second to none. As a public man, he is well known in journalistic circles as the editor and proprietor of the Veterinary Record."

We have written the Canadian Minister of Agriculture on this subject, and have the following reply:—

Ottawa, Aug. 19, 1893.

Gentlemen,—I have to acknowledge your letter of the 17th inst. in relation to the cattle regulations. You ask what steps, if any, have been taken in order to demonstrate the freedom of Canadian herds from contagious pleuro-pneumonia. When the question arose in England, in October last, of Canadian animals being affected, every part of the country was examined, if not by a little army, at least by a considerable staff of veterinary surgeons, without any trace of the disease being found. The reports of all the veterinary officers of the department in all parts of the Dominion have since been uniform in the same sense; and it is not possible that contagious pleuro-pneumonia could exist in Canada without the fact becoming known.

As respects the second question in your letter, the department has authorized the sending of two experts to Canada by the Veterinary Department of the Imperial Government at the expense of the Canadian Government. A similar invitation was made in October last. It was not accepted then, but from a recent debate in the House of Commons in England I think it is likely the invitation will now be accepted.

I have the honor to be, gentlemen,
Your obedient servant,

J. LOWE,
Deputy Minister of Agriculture.

The Wm. Weld Co. (Ltd.), London, Ont.

Some time ago cable despatches from England represented the Minister of Agriculture as saying he would gladly authorize this sending of experts to Canada to determine whether or not any plague existed here; but in a later speech he appears to have refused to do so. Right or wrong, the restrictions are to be maintained, that is evident, and the Scottish Farmer even hints at the absolute prohibition of the importation of foreign stores; and when that paper says there exists "no economic reason" for allowing stores to come in, it simply means that they are trying the panacea of protection. Canadian cattle men may make up their minds that they will get no favors in Britain, but the honest reason should be given instead of slandering the healthy cattle of Canada.

Deloraine Fair.

A very successful fair was held in Deloraine on August 11th. The entries of horses and cattle were numerous, and some creditable specimens were shown. The exhibit of sheep and pigs, though not numerous, was of good quality. The show was held a little late in the month, and the harvest coming on earlier than usual interfered considerably with the attendance as many were starting at the harvest or busy putting machinery in order, and so were unable to attend.

Chatty Stock Letter from the States.

(FROM OUR CHICAGO CORRESPONDENT).

Business in this market for the past month has been much unsettled by reason of so much uncertainty in financial matters. Prices have shown at times violent fluctuations, which, from the standpoint of supply and demand, seemed unreasonable. Fortunately receipts have been moderate most of the time, and variations in values have not gone beyond certain limits. The general outlook is a little more favorable than it was. The high rate of exchange on all eastern paper has practically put an embargo on shippers doing business through the banks. This has been a serious blow to this branch of the trade, and has been the means of crippling it very much.

Exporters were doing a good business up to two weeks ago, but the decline of British markets has discouraged business in that line, and now they are operating very cautiously.

The season of western range cattle has been fairly inaugurated. So far supplies have not been excessive, but the quality was generally poor, and prices naturally low.

Hogs have fully recovered the smash occasioned by the Cudahy collapse. Holders in the country concluded not to sacrifice, and the result was a period of small receipts, which, with a good demand, caused an upward turn in prices, though the market is very feverish and unstable.

Top prices at present are about as follows:—Cattle, \$5.25. Hogs (light), \$6. Sheep (native), \$4.40; western, \$3.50; lambs, \$5.50.

Light hogs sell at a premium of 50c. over heavy.

Sheep prices have been very unsatisfactory. The market has been over-stocked with common and inferior grades, many of which were practically unsaleable at the lowest point of the year. Western sheep are coming freely from the ranges. They meet with a light demand from buyers, because they are hardly fat enough to suit killers.

Receipts thus far this month foot up 175,800 cattle, 290,200 hogs, and 183,800 sheep, showing a decrease of 30,600 cattle and 53,400 hogs, and an increase of 63,100 sheep compared with a year ago.

Dealers do not hope for much improvement in prices until the silver question is definitely settled.

Agricultural College Affairs.

A commission, consisting of Mr. John Winchester, of Toronto, Master in Chambers, Mr. John Waterworth, ex-M. P. P., farmer, of Wardsville, and Mr. John S. Pearce, seedsman, of London, have completed their enquiry into the alleged lack of harmony among the staff of the Ontario Agricultural College at Guelph. We elsewhere give their findings, which were unanimous. The report itself, which is before us, covers 156 pages, and is the result of about three weeks' investigation, 94 persons in all being examined. Bulky though the report is, Prof. Shaw complains, in his defence through the daily papers, that all the testimony was not included, and that the compilation has not been fair to him. It would have looked better to have given the evidence *in extenso*. The petition asking for an investigation was presented by five ex-students—R. R. N. Morgan, Strathroy, W. L. Carlisle, Chesterville, D. Buchanan, Toronto F. Mullholland, Yorkville, and W. Randall, Camperdown, stating as follows:—

"Speaking on behalf of the great body of graduates of the Ontario Agricultural College, we recognize that you have done much in the interests of agricultural education, especially in the equipment of this institution. We certainly owe our gratitude to the present Minister of Agriculture for the many improvements he has made during his tenure of office, some of which are the establishment of the Dairy School and the erection of new buildings. The College is a great power for good in our Province and elsewhere, and has vast possibilities, but we regret to say it has not done and is not doing what it might. Why? It is well known there is something seriously wrong which has long existed and cannot exist much longer. Unless speedily corrected it must result disastrously. The existing state of affairs is causing comments through the country unfavorable to the institution, has kept students away from the College, and has a most injurious effect upon the character of the students during their course."

Having gone carefully through this extensive report and contrasting it with the findings, we think the latter might have been condensed and in some respects made more pointed.

That there was lack of harmony in the institution is quite evident from this report, and the wonder is that so much good work has been accomplished during the past few years as has been the case. The commissioners hold Mr. Shaw, Professor of Agriculture, chiefly responsible for this element of discord. The question of authority is really the central one in this whole difficulty. It is quite apparent that in any institution of this kind there must be one responsible head, and among subordinate officials a unity of action, if the best results are to be secured.

From the very outset Mr. Shaw seems to have felt or been suspicious that he was slighted. He complains, for instance, that on the first evening of his arrival at the College a special room was not in readiness, and he was required to sleep in a bed in

the room occupied by the President's secretary. When Prof. Shaw's wife was coming to visit him, President Mills extended an invitation (which was accepted) to entertain her during her stay, and sent his carriage to the station to meet her, but another carriage was there and she was taken somewhere else. When President Mills afterwards spoke about it, Prof. Shaw simply listened and made no explanation. Still later he imagined that in consequence of a letter given to Colonel Clarke, the latter ceased giving his son a ride in his carriage, and took up Mr. Mills' boy instead. In the evidence, however, it appeared there had been no communication from Dr. Mills to Colonel Clarke, that such a thing had never been thought of by either of them, and that as a matter of fact Mr. Mills' boy himself had requested Colonel Clarke to take up Mr. Shaw's son, who was lame. Yet for a long period of time this imaginary grievance rankled in Mr. Shaw's mind, and so the thing goes on, the troubles becoming greater. It is greatly to be deplored that his work there has been marred in this way. He admits himself making a serious mistake buying cattle at his own auction sale for the college farm, contrary to the rules and the decision of the Advisory Board.

We must confess that we are unable yet to see any real reason why the staff should not have worked together harmoniously. Mr. Shaw was doubtless actuated by a strong desire to make a success of his work in the institution, and certainly had a capacity in getting through a vast amount of work, as was shown by the fact that he was able to earn at least \$900 in writing for various papers, in addition to his college work (laying his services "upon the altar of his country," as he puts it), for which he received \$2,000 per year. Having the advantage of direction from two such thoroughly practical and successful men as the two successive Ministers of Agriculture, the Hon. Charles Drury and the Hon. John Dryden, together with the advice of the Advisory Board, consisting of such successful farmers as John I. Hobson, John McMillan, M. P., E. Jeffs, J. S. Smith, G. B. Boyce, D. A. Dowling and Wm. Donaldson, he should have been able to have made a marked success in the farm department, and undoubtedly great improvement has been made there within recent years. We notice that he was very strongly urged in the direction of fixing the farm roads, cleaning up about the buildings, killing weeds, etc. On one occasion, when he had been advised to repair a farm road, he undertook, on his own authority, to improve the public road first, saying he thought that would have a better effect upon visitors. It would certainly have been much better all round, had he fallen in line with the able men who were associated in directing affairs at the farm, instead of resisting authority. It was most unfortunate also that he dropped into the habit of explaining (indirectly, perhaps, at times) to the students that he was hampered, or that he desired to pursue a certain course, but could not, because some one else in authority did not concur. Hon. Mr. Drury very early foresaw and clearly pointed out that this would prove destructive to discipline and demoralize the whole institution.

In his defence, Mr. Shaw charges the commission with partizanship, and with making an unfair report against him, explaining among other things that he was not aware of the existence of by-laws governing the institution when he took office. If he could not fall in line, it seems to us that the rational course would have been to have severed his relation with the institution.

With the exercise of a little more common sense, and the application of the "give and take" principle by Mr. Shaw, we believe this trouble would have been avoided, and the commission and its work would never have been needed. The students whose agitation brought about the investigation are entitled to credit for the light that has been thrown upon the weak points in the past conduct of the institution, and it is to be hoped this storm will clear the college sky and result in its doing still more effective work for Ontario agriculture.

The Toronto Empire on the College Trouble.

The Empire, of Toronto, very concisely sums up and disposes of the Agricultural College trouble as follows:—

"From the report of the commission that has been investigating the affairs of the Guolph Model Farm it is clear that the staff and students constituted anything but a happy family. Nearly everybody about the place was, if the commissioners are correct, conspiring against somebody else. The root of the trouble is alleged to be that Prof. Shaw desired to get control of the institution free from responsibility towards the president or the Government. For this purpose he was poisoning the minds of everybody against the president. The late resident master, Mr. E. L. Hunt, also had a knife whetted for Dr. Mills because of the dismissal of the matron. A number of the students who had been rebuked by the president went around by way of revenge breathing slanders against him. The assistant chemist, who was in league with Prof. Shaw, directed his guns chiefly against the assistant resident master. The farm foreman made it his business to foment discontent among the students while they were in the field. The herdsman, who took sides with the president, was severely punished by Prof. Shaw for doing so. Indeed, he was given an assistant who was utterly helpless among the herd by reason of his abject fear of bulls. Under these circumstances the commissioners were quite justified in determining that there was a lack of harmony. That puts it very mildly. The institution was in a state of mutiny, and but for the timely intervention of the Government, strangely enough, at the instance of Prof. Shaw, it would have been necessary to call out the militia."

Findings of the Ontario Agricultural College Commission.

With reference to the charge of lack of harmony on the part of Dr. Mills, the principal evidence respecting the harmony of the staff and officers of the College prior to 1888 was given by the late assistant resident master, Mr. E. L. Hunt. He stated that the following officers were dismissed or resigned in consequence of a lack of harmony between them and the President of the College, Dr. Mills, namely, Professors Brown, McMurrich, Robertson, himself, Bursar Deacon, Farm Foreman Woods, and Matrons Mrs. Speight, Miss Dunn and Mrs. Martin.

The Commissioners regret to be compelled to report that Mr. Hunt gave his evidence in a most unsatisfactory manner, apparently with one object in view, namely, to injure the President, towards whom he admitted having very bitter feelings. His evidence at times was conflicting and contradictory on important matters.

It was apparent from his own and other evidence given upon the subject that he had been influenced against the President by Mrs. Martin when matron, and that this feeling became intensified upon the dismissal of Mrs. Martin.

He has apparently been doing all in his power to poison the minds of one or two of the officers and several of the ex-students against the President, and was one of the chief agitators for this investigation.

Upon the evidence of Dr. Mills, Prof. Robertson and others, your Commissioners are of opinion that Mr. Hunt was entirely mistaken as to the relations of Dr. Mills and the officers named, other than Mrs. Speight, whose removal at the President's request was justifiable.

With reference to the lack of harmony alleged to have been caused by President Mills towards Prof. Shaw, your Commissioners are of opinion that the evidence establishes that wherever lack of harmony existed it was at first caused by Prof. Shaw's actions towards the President, in (among other things) talking against the ability of the President to outsiders, as shown by the letter written to him by Hon. Charles Drury, then Minister of Agriculture, a few months after his appointment, and his continued refusal to acknowledge the authority of the President.

The cause of the lack of harmony, was in the opinion of your Commissioners, not attributable to Dr. Mills, but to Prof. Shaw.

With respect to the conduct of Dr. Mills, it appears that Mr. Hunt stated to Sharman and others that he was an untruthful man, and that this statement was accepted by them and was their only evidence in support of the charge that the President was a false man. Three of the ex-students, namely, Buchanan, Brodie, and Sleightholm, stated that the reason they objected to the President was that he had found fault with them while in the College, having on one or two occasions called them names they considered improper.

Prof. Robertson, in his evidence, stated that he had found fault with the President in consequence of some matters of discipline, and the dismissal of Mrs. Martin. It was evident that Prof. Robertson had not known all the circumstances connected with the different matters complained of by him at the time he felt aggrieved. He spoke highly of the President in his position at the College, and considered that he was doing good work; and that he personally did not leave through any lack of harmony with the President, and that he never found it impracticable to get his work well done.

Prof. Shaw stated in his evidence that Dr. Mills was an untrue man, but gave no instance of untruthfulness in support of this general charge.

Two or three of the present students and Mr. H. B. Sharman, the assistant chemist, gave evidence that the President was false, and alleged in support of that statement that the President had stated to the two gentlemen making inquiry into the late trouble against Mr. McCrae, the assistant resident master, that he did not know the minds of the third year students in that regard. This statement of the President was undoubtedly true, for we find that in the evidence of Mr. Ferguson he gave the circumstances of the third year students agreeing to go before the President and state their feelings on the matter, but when they went before him, they declined to do so, and Prof. Shaw found fault with them for their action.

Another occasion stated by these students and Mr. Sharman showing the President to be "false," was in reading a telegram to the students from the Minister of Agriculture respecting their attendance at lectures prior to the investigation into the McCrae trouble. The telegram and papers respecting that matter bear out the President's statement that he read only what had been sent to him, and that the students and Sharman were mistaken.

Mr. John I. Hobson, Chairman of the Advisory Board in connection with the College, spoke in the highest terms of the President's character.

In our opinion the attempt thus made to defame and damage the good name of the President has utterly failed.

We are of opinion that the President has on certain occasions acted harshly in speaking to students, and possibly to some members of the staff, but the circumstances under which he did so evidently required stern discipline.

With reference to the instances of lack of harmony given by Prof. Shaw, first, those against the President, and second, those against the Minister of Agriculture, the evidence fully establishes the fact that Prof. Shaw had no ground for complaint whatever. The instances given were most trivial in their nature, and had evidently been previously made use of by him for the purpose of poisoning the minds of the students against the President and the Minister of Agriculture. Your Commissioners find the evidence establishes that the President was justified in all his actions in the instances referred to by Prof. Shaw, and that they were of a most trivial nature. We fail to understand how any gentleman of intelligence could look upon such matters as instances of lack of harmony on the part of the head of the Institution, whose duty it was to keep an oversight of all matters connected with the outside and inside departments.

We are of opinion that the real difficulty with Prof. Shaw was his desire to obtain full control of the agricultural department without responsibility to the Minister, the President or any other officer. He persistently refused to be guided by the President, or to submit in any way to his authority from the day of his appointment up to the present time. The President acted within his authority given him in the by-laws in the instances mentioned.

In connection with the action of Dr. Mills in many of the instances above referred to, your Commissioners find that he was remiss in not upholding his authority over the agricultural department on all such occasions. Had he done so, we are of opinion that much of the present difficulty would never have arisen.

With reference to the instances of lack of harmony with the Minister given by Prof. Shaw, your Commissioners are of opinion that the evidence proves that Prof. Shaw was desirous of evading all responsibility to the Minister of the day. The letters written first by Hon. Charles Drury, and subsequently by Hon. John Dryden, fully prove the difficulties they had to contend with through the actions of Prof. Shaw. His replies thereto were in several instances most impertinent.

With reference to Barnett, the herdsman, while we are of opinion that the herdsman acted improperly, at least on one occasion, namely, with reference to the sheep pen, and that he expressed himself toward Prof. Shaw in a manner that was unbecoming, we find that it was the duty of Prof. Shaw, having charge of that department, to give such instructions to the herdsman as would enable him to attend to his duties efficiently. This Prof. Shaw admittedly declined to do. He blames Barnett for over-feeding, but is unable to give any instance in which that was done. He, on the other hand, neglected to make inquiry into the quantity of feed supplied to the stock by Barnett from time to time, and also refused to give detailed instruction as to the manner of feeding. He admitted that he seldom visited the stables to ascertain what was being fed, or the manner of feeding, or how the cattle,

sheep and pigs were being taken care of. He appeared to judge that Barnett was over-feeding from the fact that the cattle were too fat and were unprofitable, and that the cost of feeding was much larger than formerly.

It is no doubt true that the cattle have been kept in high condition, but as stated by Dr. Grenside and Mr. Hobson, that was absolutely necessary for educational purposes, and especially necessary considering the position of the institution to the public, and the liability to adverse criticism in case they were not found in proper condition.

We are of opinion that Prof. Shaw, in connection with Mr. Story, the Farm Foreman, early took a dislike to Barnett, because, without reasons, they considered him to be a friend of the Minister of Agriculture, and believed him, as Prof. Shaw states in his evidence, to be kept there by the Minister as a spy. There was no evidence whatever to show that Prof. Shaw's belief had any foundation in fact. On the contrary, it was shown conclusively that Barnett received no instructions whatever from the Minister, nor was he there for the purpose of informing the Minister of any acts of Prof. Shaw or of any other officer in connection with the institution, but was another officer in connection with the institution, but was retained by the Minister solely on the ground of his qualities as a herdsman and feeder of stock. These qualities are fully upheld by the evidence of Dr. Grenside, Veterinary Surgeon to the institution for eleven years, and by Mr. Hobson, Chairman of the Advisory Board since its inception.

We are of opinion that Prof. Shaw attempted to interfere with Barnett by endeavoring to impose upon him as his assistant an old man, who had acted previously as helper, and had proved himself utterly unfit for succeeding in consequence of his fear of the bulls. These facts were stated by Barnett to Prof. Shaw, and notwithstanding such knowledge the Professor insisted to compel Barnett to accept him. Barnett was subsequently upheld in his actions in this matter by the Advisory Board.

With respect to finding fault with the Minister for purchasing stock in the Old Country on account of the expenditure, it appears that Prof. Shaw was aware of the stock being purchased. It appears that the Minister obtained an increased grant to cover the over-expenditure on account of such purchase, as shown in the Public Accounts for the year 1891, page x.

With reference to his difficulties about the bulletins, we consider that, instead of finding fault, Prof. Shaw should have been grateful to the Minister and his Deputy for correcting the many mistakes therein, which, had they been published in the form presented by Prof. Shaw, must have been ridiculed by the public generally.

Respecting the assistance for work in his office, your Commissioners are of opinion that, while doing as much work as an ordinary editor (for which he received at least \$900 a year in addition to his annual salary from the Government, and with-out the knowledge of the Minister or members of the Government, or the President of the College), it will become Prof. Shaw to complain of overwork in the performance of his official duties under the circumstances. When the Minister of Agriculture propose to relieve him from the experimental department in order to give him more time for his remaining duties, he found fault with the Minister for even proposing it, and accused the Minister of insulting him by such proposition.

As to the complaint that he did not have an opportunity of purchasing stock in time for experimental work in one instance, the evidence produced by himself was that he wrote to the Minister for money on October 19, 1892, and his wishes were at once complied with, as soon as he accepted the conditions proposed by the Minister on which the stock should be purchased.

As to charging Prof. Shaw with being responsible for large over-expenditure, the evidence fully establishes that ever since his appointment the expenditure in his special department has exceeded the estimates.

Your Commissioners would respectfully refer to the record book kept by Prof. Shaw, in which he entered all matters that would have a bearing against the Minister, President and other officers of the institution, in case an investigation should be held. This book is dated 28th October, 1889.

As to the conduct of Prof. Shaw, your Commissioners cannot condemn him too severely. We are of opinion that he has systematically poisoned the minds of students from the date of assuming his duties up to the time of this investigation against the President of the College and the Minister for the time being. His opportunities for so doing were facilitated, as he himself stated, by his working with the students in the fields and on the roads.

Prof. Shaw was warned by Minister Drury of the dangerous results of such conduct shortly after his appointment. It was pointed out to him by the Hon. Mr. Drury in a letter, dated December 13, 1889, that "nothing can be more destructive to the harmonious working of an institution than for any officer to fall into the habit of explaining to students that he desired to pursue a certain course, but was prevented from so doing because some one in authority did not concur with his views."

He won the confidence of the students in many ways, some by giving them employment at the expense of the Government as drivers, others by showing an interest in their welfare, and then mentioning his grievances, giving them to understand that he was a much abused man, and that he was unable to do for them and the farm as much as he would like because his powers were being curtailed by the Minister and the President, who were oppressing and hampering him in the way above indicated.

He has in this way shown a very marked and deplorable want of loyalty towards the Minister and the President, as well as towards the institution, and has done much to bring about the present feeling of dissatisfaction and unrest among the students and ex-students, he invariably making them believe that he was a victim and the Minister and the President his oppressors.

Your Commissioners have set forth in this regard certain facts that were proven against Prof. Shaw: first, the purchase of his own cattle after his appointment in the name of his servant, and without the knowledge or consent of the Minister or the President, and in direct violation of the by-laws of the institution.

We also find that he was guilty of gross neglect in not keeping a proper account of travelling expenses during the month of January, 1893, whilst on a tour in connection with Farmers' Institute meetings. We are of opinion that he received the sum of at least thirty dollars over and above the actual expenses incurred and paid out by him for the delegation during this tour. His explanations as to the discrepancy in the accounts were most unsatisfactory, and fail to account for the overcharges. The manner of rendering the account was well known to himself, and there were columns for putting down the items that he claimed to have paid out, but he neglected or ignored the same. He kept the account, according to his own evidence, carelessly on slips of paper, which he afterwards destroyed. His evidence on this subject was contradictory in many respects, and although six months had not elapsed from the date of expenditure to the time of giving his evidence, and all that expenditure made within fifteen working days, he stated that he could not remember how the sum of forty dollars over-expended was incurred other than by a general statement that he had paid out all he had charged.

Your Commissioners opened the investigation in Toronto, on June 14, 1893, in consequence of a number of the students being there attending to receive their degrees prior to their departure for home. This was done for the purpose of obtaining their evidence, and also saving expense and delay in bringing them before the Commission from their various homes. After examining such students and two or three others who attended on June 14 and 15, your Commissioners adjourned to the College, and continued the examination of witnesses on June 16. Prior to commencing such examination at the College, your Commissioners publicly referred to the examinations in Toronto and the reasons for holding same. Prof. Shaw was present when such announcement was made. His son was examined in Toronto and was present during the examination of nearly all the other witnesses there, and from

remarks made by Prof. Shaw during the investigation, it was evident that he was aware of the nature of the evidence so given. At the close of the investigation Prof. Shaw handed in a letter to your Commissioners, in which he protested against the action of your Commissioners in taking the evidence in Toronto without his knowledge, in the presence of Dr. Mills. Your Commissioners informed Prof. Shaw that the investigation was a public one; that they allowed the public to be present, refused admission to no one; that Dr. Mills came in after the first witness had been examined; that there were no charges made against Prof. Shaw or any other officer. Prof. Shaw was then asked if he had been prevented from calling any evidence by your Commissioners, or if he had any further evidence to give before the Commission closed, to which he answered: "No, sir."

Your Commissioners beg to state that Prof. Shaw was represented during the greater part of the investigation by able counsel; no other officer asked the same privilege; and that your Commissioners sent for such witnesses as he required, the expense of same being borne by the Government.

With reference to H. B. Sharman, the Assistant Chemist, we find that he had unduly interested himself in connection with the student movement against the Assistant Resident Master, Mr. McCrae. It appears that he consulted with them from time to time, and apparently encouraged them in their actions. He also alleged in the presence of students that the President was an untruthful man. He informed Prof. Shuttleworth that the President was a liar. He obtained from one of the students a register containing the names and addresses of ex-students, and without the knowledge or consent of the President, forwarded it to Mr. Morgan, of Strathroy, an ex-student, for the purpose of helping him to communicate with the ex-students to enlist their sympathies in the agitation for an investigation of the College. He stated to at least two of the students that they should keep the matter quiet and not inform the President of what he had done.

His acts in connection with both matters were, in the opinion of your Commissioners, such as would lead to disloyalty among the students and influence them to dishonorable acts, especially as it was shown by one of the students that he advised them to recommend a student being called on behalf of Mr. McCrae during the investigation into that trouble, believing, as he stated, that such student would give evidence detrimental to Mr. McCrae.

With respect to Mr. Johnston E. Story, the Farm Foreman, your Commissioners are of opinion that he has been active, in connection with Prof. Shaw, for some years in poisoning the minds of students against the Minister and the President. He reported every little circumstance that came to his knowledge to Prof. Shaw that he considered would occasion discord between Prof. Shaw and the Minister, the President or any officer of the institution.

We are also of opinion that he has not, as farm foreman, attended to his duties in looking after student labor and the regular farm labor as required of him, and that the large expenditure for labor has been largely owing to his laxity in overseeing his work.

Your Commissioners are of opinion that it is a great mistake to require him to travel throughout the country purchasing stock, and thus neglecting his legitimate duties as farm foreman.

Your Commissioners beg respectfully to report that the petition presented by the ex-students calling for this investigation was so presented by friends of Prof. Shaw, asking for the appointment of four Commissioners, three of whom they knew to be opposed to Dr. Mills, the President of the College, and evidently with the intention of having Dr. Mills removed from his position as President. The evidence given by them shows how greatly mistaken they were in the grounds for seeking the investigation.

This investigation has clearly proved to your Commissioners that it is in the interest of the institution that the rules, regulations and by-laws in connection with the institution should be rigidly enforced; that it is absolutely necessary that there should be only one head to the institution, and he alone responsible to the Minister for the proper discharge of the duties of all the staff and officers connected therewith, and that the College by-laws are sufficiently strict and definite if properly enforced.

In conclusion, your Commissioners regret to be compelled to report that the manner in which some of the students gave their evidence indicated that they were not desirous of giving all the information within their knowledge. In this connection we would mention the name of Mr. W. M. Newman, who we believe evaded the questions in a very dishonest manner, and we would also report that his actions among the other students are deserving of the highest condemnation.

We have the honor to forward herewith the evidence taken during the investigation, together with all documents referred to therein. We have the honor to be,

Your most obedient servants,
JOHN WINCHESTER, Chairman.
JOHN WATTERWORTH,
J. S. PEARCE, Commissioners.

Toronto, July 20, 1893.

Memorial to Mr. Foster.

Brandon, Man., July 31, 1893.

To the Editor:

DEAR SIR: You will much oblige the committee that was appointed to get up the enclosed memorial, by inserting the same in your excellent paper with the following advice to the farmers:

To the Farmers of Manitoba, Gentlemen:

We, the committee appointed at a meeting of the farmers of this district to get up a memorial to be presented to the Hon. Mr. Foster, Minister of Finance, on his visit to Manitoba, have tried to discharge the duty assigned us by producing the memorial as you see it in this paper, and which, when submitted to a large mass meeting of the farmers of this country, was unanimously adopted.

We therefore, with confidence, submit the same through the press to every farmer of this Dominion for their adoption, trusting that we farmers can be united on this platform, and that in every locality there will be meetings called and the said memorial (or one as similar as possible) adopted, and delegates appointed from each place to wait on and present the same to the Minister of Finance, when he will visit their locality, as the hon. gentleman has expressed a desire to meet the farmers at different points in this country.

Let every man do his duty; be prepared in time, which means action at once, and we will convince the government that we mean business.

JOHN LEECH,
By order of the committee.

To the Hon. George E. Foster, Minister of Finance.

SIR,—In continuance of expressions by petitions and resolutions last winter, the farmers of Western Manitoba in mass meeting assembled in Brandon on the 29th of July last, adopted the following memorial to the Government as declarative of their necessities for consideration at the next meeting of the Parliament of Canada. They feel that in this your first official visit to the Northwest, which they are pleased you have made, after reasonable enquiry you can find these demands to be only equitable and just. They find that nothing less than meeting these will make farming reasonably remunerative; that the demands are in no way in conflict with the agriculturalist in any other section of the Dominion; and that they are neither extravagant nor unjust to any when due consideration is made for what has heretofore been done for other interests of much less importance to the Dominion. They therefore respectfully submit this as the only list of concessions, the granting of which can give them justice in the premises.

EXPORTS.

The exports of any country are one measure of its internal importance, and consequently the classes employed in export products may be valued according to results. In the trade and navigation returns for 1892, we find the exports classified as follows:—

Of the forest, \$23,633,675
Animals and products, 30,063,775
Agriculture and products, 30,817,406
Manufactures proper, 7,740,855

As portions of the first two items belong to manufactures and agriculture respectively, we separate them and find in the first

Manufactures, \$18,000,000
Animals and products—manufactures, 15,000,000
Add manufactures proper, 7,740,000

Total of manufactures in every form, \$40,740,000

The balance of forest and animals being agriculture pure and simple, when added to the agriculture above gives a total agriculture of \$52,268,075. As manufactures and agriculture are affected in reverse ways by protection, its benefits and burdens are measured in exports by the figures above.

Again manufactures may be divided into 40 classes, and as the government has from time to time lent its ear to the representatives of these forty interests representing an average of \$1,000,000 a year each, we submit it is only justice they should consider the claims of the representatives of the \$52,268,075, which are, province by province, section by section, practically the same.

IMPORTS.

If again we take the matter of revenues from customs and excise, the agriculturists being 3,800,000 of the 5,000,000 of population, they contribute \$20,000,000 of the \$23,000,000 raised from these two sources. If it is contended the manufacturers per capita, by importing heavily for manufactures, pay larger customs than agriculturists, as the latter pay them again in the consumption of the products, it leaves the figures unchanged.

THE PROTECTIVE POLICY.

Whatever may be said of the necessity of this policy at its inception, even its most ardent admirers must admit, with circumstances as changed as they are now, there is every argument for its modification. When introduced there was excessive production in many lines in the United States, because of the plethora of cheap money consequent upon the close of the civil war, and now things have got into their normal condition, their money has got to its true value; the consuming power of their people is better gauged, and their Northwest is being opened up as a field for consumption. Our manufacturers, too, were in their infancy; but now, as most of them can take money they have made in their industries and invest it in outside enterprises and can compete with the Americans in other fields, we submit they can compete at home. In any event competition from outside would cheapen prices, the 3,800,000 out of the 5,000,000 population would get the benefit, and it is desirable on the principle of "the greatest good to the greatest possible number."

But this is not all. When, from an agricultural point of view, the N. P. was adopted there were practically four provinces in Confederation, in every one of which manufacturing industries were created that were of more or less benefit locally to the agriculturists. Since then half a continent has been opened up to agriculture in the Northwest, which can derive none of the benefits of these industries; but the people are compelled to endure all the hardships of enhanced prices by heavy freights and other obnoxious usages adopted in a new country. Some of these may be shown by one illustration: The Toronto binder is sold to Ontario farmers for \$110 cash, the freight to this country is \$12.50, and the price here is \$140 cash instead of \$122.50. The government cannot fix the prices of the products of private enterprise, but it can by the removal of tariffs let in a competition that will speedily work the cure.

But the N.P. is failing in another of its missions, as is evidenced by the statement of the trade and

navigation returns. We give the duties on imports into Manitoba of agricultural implements for the years 1886, 1889 and 1892 to illustrate this:—

	1886.	1889.	1892.
Harrows	\$ 124	\$ 222	\$ 378
Harvesters	7,111	960	22,658
Mowing Machines	64	222	6,385
Plows (sulky and walking)	161	599	9,384
Threshers and Separators	461	9,272	23,470
Barbed Wire		61	222
Twine for Binders		428	25,902
All other Implements	1,395	2,850	9,470
Total	11,116	14,314	98,579

This gives the imports of 1889 fifty per cent. greater than those of 1886, and those of last year nine times those of 1886, and seven times those of 1889.

The lesson is, it has taken piles of money out of our pockets for revenues, and fails to keep "Canada for the Canadians," as it was alleged it would do. In a word the duties fail to keep the home producer for the home article, but enables the home producer to extort unusual prices on all sales made—as witness a comparison between prices on this side and the other side of the line to actual consumers:

	Dakota.	Manitoba.
Stubble plow, steel beam 14 inches	\$ 18	\$ 23
Breaker plow	14	25
McCormick binder	120	180
Deering binder against Toronto binder here	125	140
Mowers	55	70
Rakes	25	35

Or a total of about \$140 on an average outfit less than here.

From the figures above it will be seen that last year Manitoba paid \$25,902 out of the \$41,852 paid by the whole Dominion on binding twine.

But our grievances are not as agriculturists limited to the implement, twine and barbed wire trades, which are so important to farming in this country. In the lumber protection a burden of equally serious moment is forced upon us. With the American forests practically exhausted there is no danger of illegitimate competition from that quarter, and with our own forests none too large, there is no need for haste in production—the removal of duties could only lead to reasonable competition, and would greatly preclude the possibility of combines. As building material of every kind is scarce in this country, and as protection for man, beast and implement is so imperative, cheap lumber is the all-important question to the Northwest farmer. Under protection we have now, for instance, a combine of all producers that have access to our markets that exacts a profit of 20 per cent. on cost at delivery on all sales, rendering good lumber beyond the reach of the farmer of moderate means, and enabling the dealer to pocket three times the profit in any other commercial business with the same amount invested. Under this combine a profit of half a million of dollars annually is open to the lumber dealers of Manitoba alone.

COAL OIL.

Though the duties on coal were nibbled at last session, a clean sweep must be made to relieve us of an unnecessary burden. We say unnecessary, for the trifling benefit of the industries in Lambton county, Ont., are not at all an equivalent, even from a Federal point of view, for the consequent taxation on all classes of the community. Our payments on duties on this one commodity alone, for the past three years, were \$1,154, \$10,300, and \$26,888. It would require the art of a sagacious statesman indeed to show how the Northwest through the operation of the wells at Petrolia got a return for the \$26,887 contributed to the revenue last year.

To sum up, estimating a set of implements to last five years, those in use on an ordinary quarter section cost the farmers of this country unnecessarily each year..... \$ 30 00

As the railway rates to the seaboard cost the Manitoba farmer from 2 to 5 cents more per bushel on wheat than his Dakota competitor, the quarter section farmer is in this particular handicapped per year by 50 00

The extra cost of lumber, coal oil, twine, etc., amounts to at least another..... 45 00

Total..... \$ 125 00

Which means the difference between successful and unsuccessful operation to the average farmer wherever in Canada he may be found.

When considering the arguments for and against the position herein taken, there is another most important fact to which we desire to call the attention of the government. It is this—the farmer is the only class of producer in Canada who cannot fix the cost of his products, no matter what may be the price of his productions. The manufacturer will regulate the price of his products according to their cost through duties on raw materials, price of labor, etc., but no matter what agencies may tend to raise or lower the costs of agricultural products—the Canadian farmer has to take the prices offered in England and other consuming centres. The necessity, therefore, for enabling him by the removal of tariff restrictions, high rates of carriage of products, etc., to better compete with his American or other rival in the markets of the world must be apparent to all who give the matter a thought.

We submit, therefore, to make farming profitable in this country (and profitable operations to those employed are the best, the only true immigration agent the government can employ), we must have coal oil, binding twine and barbed wire free from duty, and the duties on implements reduced to at least not more than ten per cent, which will leave ample protection to the Canadian makers against discrimination in freights.

All of which is respectfully submitted.

Weeds.

J. HOYES PANTON, M.A., F.G.S.

With this contribution to the columns of the FARMER'S ADVOCATE the writer closes his series of articles upon the weeds of Ontario. It is wonderful how indifferent many farmers are to the presence of these waifs in plant life; but we hope that the reading of these articles will have a tendency to lead them to meet some of these enemies at the very threshold of their attack. We might add here some of the objections that may be urged against weeds:

1. They involve extra labor.
2. Smother out useful plants.
3. Rob the soil of moisture.
4. Add impurities to grain.
5. Take food from the soil.
6. Often afford shelter for insects and injurious fungi.
7. Give farms an unsightly appearance.

If we consider these objections, there is certainly much reason for continual war being waged against weeds. As a fitting conclusion to our outline of the most common weeds in Ontario, and the remedies likely to be successful in getting rid of them, the writer adds in a tabulated form some information which may be of service to intelligent readers for reference in the future.

A TABULATED LIST OF THE MOST COMMON WEEDS IN ONTARIO.

ORDER.	SCIENTIFIC NAME.	COMMON NAME.	DURATION.
RANUNCULACEÆ	Ranunculus acris	Buttercup	Perennial.
	R. bulbosus	Bulbous buttercup	Annual.
	R. sceleratus	Cursed crowfoot	Perennial.
CRUCIFERÆ	Aconitum napellus	Monkshood	Perennial.
	Camelina sativa	False flax	Annual.
	Capsella Bursa pastoris	Shepherd's purse	"
	Lepidium virginicum	Pepper-grass	"
PAPAVERACEÆ	Papaver rhoeas	Corn poppy	Perennial.
	Chelidonium majus	Celandine	Annual.
	Hypericum perforatum	St. John's Wort	Annual.
	L. Vespertina	White Cockle	Perennial.
HYPERICACEÆ	Silene inflata	Bladder campion	Perennial.
	Cerastium arvense	Field chickweed	Annual.
	Stellaria media	Bouncing bet.	Perennial.
	Saponaria officinalis	Purslane	Annual.
PORTULACACEÆ	Portulaca oleracea	Mallow	Perennial.
	M. Moschata	Musk mallow	"
ANACARDIACEÆ	Rhus venenata	Poison sumach	"
	R. toxicodendron	Poison ivy	"
LEGUMINOSÆ	R. radicans	Climbing poison ivy	Annual.
	Trifolium arvense	Rabbit-foot clover	Perennial.
	Vicia Cracca	Black medick	Annual.
	Medicago lupulina	Sweet clover	"
UMBELLIFERÆ	Melilotus alba	Yellow clover	"
	M. officinalis	Wild tare	"
	Daucus Carota	Wild carrot	Biennial.
	Conium maculatum	Poison hemlock	"
ONAGRACEÆ	Pastinaca sativa	Wild parsnip	"
	E. nothera biennis	Evening primrose	Perennial.
CRASSULACEÆ	Eplobium augustifolium	Great willow herb	"
	Sedum acre	Mossy stone-crop	Biennial.
DIPSACEÆ	Dipsacus sylvestris	Teasel	"

ORDER.	SCIENTIFIC NAME.	COMMON NAME.	DURATION.
COMPOSITÆ	Senecio vulgaris	Groundsel	Annual.
	Ambrosia artemisiifolia	Ragweed	"
	A. trifida	Horse ragweed	"
	Leucanthemum vulgare	Ox-eye daisy	Perennial.
	Achillea millefolium	Yarrow	"
	Tanacetum vulgare	Golden rod	"
	Solidago Canadensis	Cone flower	"
	Rudbeckia hirta	Blue bottle	Annual.
	Centaurea Cyanus	Knap weed	Perennial.
	C. nigra	Sow-thistle	Annual.
	Sonchus oleraceus	Corn sow-thistle	Perennial.
	S. arvensis	Fireweed	Biennial.
	Erechthitis hieracifolia	Burdock	Perennial.
	Lappa major	Chicory	"
	Cichorium Intybus	Dandelion	Perennial.
	Taraxacum Dens-leonis	Fleabane	Annual.
	Erigeron Canadense	May weed	"
	Maruta Cotula	Field chamomile	"
	Autemiss arvensis	Canadian thistle	Perennial.
	Cirsium arvense	Bull thistle	Biennial.
C. lanceolatum	Aster	Perennial.	
Aster cordifolius	Bur marigold	"	
Bidens frondosa	Elecampene	"	
Inula Helenium	Cocklebur	Annual.	
Xanthium Canadense	Mullein	Biennial.	
Verbascum thapsus	Field speedwell	Annual.	
Veronica arvensis	Neckweed	"	
V. peregrina	Toad-flax	Perennial.	
Linaria vulgaris	Blue vervain	"	
Verbena hastata	Motherwort	"	
Veronica Cardiaea	Catnip	"	
ABRATÆ	Nepeeta Cataria	Self-heal	"
BORRAGINACEÆ	Brunella vulgaris	Stickseed	Biennial.
	Echinopspermum Lappula	Common hound's tongue	"
SOLANACEÆ	Cynoglossum officinale	Blueweed	"
	Echium vulgare	Pigeon weed	Annual.
CONVOLVULACEÆ	Lithospermum arvense	Thorn apple	"
	Datura Stramonium	Bitter sweet	Perennial.
ASCLEPIADACEÆ	Solanum Dulcamara	Common nightshade	Perennial.
	S. nigrum	Ground cherry	Perennial.
CHENOPODIACEÆ	Physalis viscosa	Bindweed	"
	C. aviculare	Dotter	Annual.
AMARANTACEÆ	Asclepias trifolia	Common milkweed	Perennial.
	Asclepias Cornuti	Butterfly weed	"
POLYGONACEÆ	A. tuberosa	Plantain	"
	Plantago major	Rib grass	Annual.
EUPHORBACEÆ	P. lanceolata	Lamb's quarters	"
	Chenopodium album	Strawberry blite	"
POLYGONACEÆ	Blitum capitatum	Common pigweed	"
	Amarantus retroflexus	Knot grass door weed	"
POLYGONACEÆ	Polygonum aviculare	Spotted knot-weed	"
	P. Persicaria	Knot bindweed	Perennial.
EUPHORBACEÆ	P. convolvulus	Field Sorrel	"
	Rumex Acetosella	Common dock	"
EUPHORBACEÆ	R. crispus	Bitter dock	"
	R. obtusifolius	Yellow spurge	"
EUPHORBACEÆ	Euphorbia Cyparissias	Spotted spurge	Annual.
	E. maculata	Nettle	Perennial.
URTICACEÆ	Urtica dioica	Wild Leek	"
	Allium triocum	Chess	Annual.
GRAMINEÆ	Bromus secalinus	Couch grass	Perennial.
	Triticum repens	Foxtail	Annual.
GRAMINEÆ	Setaria glauca	Barnyard grass	"
	Panicum Crus-galli	Wild grass	"
GRAMINEÆ	P. capillare	Wild oat	"
	Avena fatua		"

29 orders, 81 genera, 104 species.

QUESTIONS AND ANSWERS.

In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Veterinary.

ANSWERED BY W. A. DUNBAR, V. S., WINNIPEG. STONE IN THE BLADDER.

GEORGE STEWART, Moosomin, Assa. :- "I have a mare that had a foal this spring. Lately I have noticed she has a difficulty in her water. She is constantly dribbling; it is unaccompanied apparently with pain. She has also a difficulty in eating or swallowing. Seems anxious enough for food, but will chew it a little while and drop it from her mouth. I thought her teeth were the cause, but a local veterinarian says her mouth is all right. He gave me some powders for her water, but there is little improvement yet. She is fast losing flesh, and, as I am anxious to discover the cause of her trouble, I apply to you. I might add that after drinking her coat stares very badly. I enclose a stamped envelope for reply, if you consider the case urgent enough for a reply in that way."

Incontinence of urine in the mare is usually a marked symptom of cystic calculus—stone in the bladder. To find out if that is the ailment, you will, immediately after the mare urinates, empty out the rectum by giving an injection of warm water or with the oiled hand; then introduce the hand into the rectum until it reaches the front of the pelvis; feel downward and backward for the bladder, and if it contains a stone or other foreign matter, its presence will be easily detected. The removal of a stone from the bladder of a mare is a simple operation, and, when carefully performed, is unattended with danger. It is, however, necessary that the operator have a sufficient anatomical knowledge of the parts, and be provided with the proper instruments. With all due respect to the opinion of your "local veterinarian," we believe that a thorough examination of the mouth, especially of the teeth, will reveal the cause of your mare's partial inability to masticate and swallow.

LUMPY JAW.

B. ROTHWELL, of Melfort, Sask., enquires for a cure for a lumpy jaw, and also asks if it is a contagious disease. Lumpy Jaw (actinomycosis) was fully described and the now generally accepted cure given in the ADVOCATE, April 15th, page 152, but for the benefit of recent subscribers we repeat in part:—It is not infectious nor very contagious; the remedy is iodide of potassium, and the dose for a mature animal about two drachms morning and evening

for a week, and afterwards one drachm twice a day for one or two weeks. The medicine may be given in bran mash.

DOG DISTEMPER.

THOS. C. GERRARD, Shellmouth, Man. :- "I have a spaniel dog who, when young, had a bad attack of distemper, and has ever since been troubled with humor in his eyes and soreness and itching in his ears. Last year about this time his feet got sore with inflamed pimples between his toes, and now again his feet are so sore that I fear he will be useless for the season's sport unless speedily relieved. What is best to do for him?"

Give your dog the following purgative dose:—Barbadoes aloes and ginger, of each eight grains; jalap, six grains; soap sufficient to form a pill. When the purgative has operated, give, morning and evening for ten days, dissolved in milk, sulphate of soda, fifteen grains. Foment the feet with warm water and apply to them, every alternate day, the following liniment: Solution of potassium, half an ounce; olive oil, three ounces; creasote, two drachms; tincture of opium, four drachms. Feed principally on porridge and milk.

Manitoba Crop Report for August.

Bulletin No. 40.—The report on crops and live stock in Manitoba dated August 15th has been issued, from which we take the following:—"Hay is plentiful over the greater part of the province. In the Central and Eastern Districts water in the hay meadows prevented early cutting. Haying was general on the 1st of August.

Wheat.—Correspondents differ very widely in their estimates as to the yield per acre of this cereal—some few estimating it as low as five, others as high as thirty-five and forty bushels per acre. By far the greater number, however, place their estimates at from seventeen to twenty-five bushels per acre. In the Southwestern District there will be a short, light crop; reports show an improvement as they move East, the yield for the Eastern District standing highest in the list. The damage done in some sections by hail will not be known until the threshing is done. Wheat headed early in July. Cutting began in some parts during the first week in August, and at this date, August 15th, wheat cutting is general all over the province. With favorable weather for gathering in the grain, Manitoba in 1893 should reap one of her best crops, and once more make a record with her No. 1 Hard Wheat.

Oats.—The oat crop is reported 'fair'—'average' or 'good' by the majority of correspondents; a few report light in straw, and possibly light grain. Favorable weather for ripening from the 5th of August will give an average crop.

Barley.—Similar to oats, but ripening too fast for a plump berry.

Peas and Flax.—Peas are not extensively cultivated, as labor in harvesting is too great. Favorable reports are given by those who grow this crop. Flax will be an extra good crop this year; the continued rains in July made the crop certain. In the Mennonite settlements, where flax is most extensively cultivated, reports indicate that flax never looked better."

The appended tables show the estimated average yields per acre for each district:—

District.	Wheat.	Oats.	Barley.	Peas.	Flax.
North Western	21. bus.	39. bus.	29. bus.	16. bus.	15. bus.
South	14.1 "	30.1 "	25.3 "	28.3 "	"
North Central	22.6 "	42.3 "	35.7 "	29.2 "	15.3 "
South	23.2 "	45. "	32.7 "	"	"
Eastern	24.5 "	41.5 "	32. "	16.5 "	"

An error having been made in the bulletin in estimating the averages for the province, we find the correct averages to be as follows:—Wheat, 19.23; oats, 38.04; barley, 31.07.

The reports regarding potatoes and roots for the Western portion of the province show light crops, but throughout the Eastern portion, where there has been a heavier rain fall, these crops are reported as "good."

Following are the figures for new breaking and summerfalling this season, and the actual number of farmers in the province as compared with 1891 and 1892:—

	1891.	1892.	1893.
Number of farmers in province	18,937	20,517	22,009
Area of new prairie broken	178,330 ac	143,919	135,924
Area of summerfalling	205,232 ac	274,588	370,291

This table is interesting, as it shows a marked decrease in the number of acres of new breaking each year, with a more marked increase in the number of acres summerfallowed from year to year, indicating an improved method of farming."

The condition of live stock is reported as excellent from every district, and tables of increase go to show a marked tendency toward mixed farming.

Hoard's Dairyman:—"Milk is improved for cheese-making by being run through a separator without abstraction of the fat, and, with very rich milk, we are not sure that it would very materially affect its quality if one pound of fat per hundred pounds of milk were taken out." The good effect of running the milk through the separator is in taking out the dirt, fibrin and other matters that cause deleterious effects to the flavor and texture of the cheese.

Among Our Implement Firms.

H. S. WESBROOK.

The pioneer implement dealer, Mr. H. S. Westbrook, who since 1877 has been carrying on a large and ever increasing trade in many of the best lines of farm machinery, continues to carry heavy stocks of such "Old Reliable" makes as the J. I. Case threshers and engines, so favorably known throughout the whole Northwest. He also handles the celebrated White Threshing Engines, manufactured by George White & Sons, London, Ont., and the Belle City Manufacturing Company's Columbia threshing outfits and horse powers, both sweep and tread powers. Another machine fast coming into general use by the municipalities is the American Road Machine, made at Hamilton, Ont., and from the superior grading done by these machines every municipality should be provided with one. Whittman's Hay Baling Presses, so arranged that the horses make a full circle, and which they claim will bale one ton an hour. In plows full lines of wheel Walking and Sulkey Plows made by the Moline Plow Co., and also the Ayr American Combination Plow, Cutaway and Leaver Harrows, and the J. S. Rowell Shoe and Press Drills. In Harvesting Machinery Mr. Westbrook handles the celebrated Walter A. Wood Binders, Mowers and Rakes. A full assortment of Waggon and Sleighs, Grain Grinders, Straw and Fodder Cutters, and, in fact, almost every implement required either by the new settler or the experienced Manitoba farmer. Intending purchasers should communicate at once with Mr. Westbrook.

STEVENS & BURNS.

"The early bird catches the worm," and nine times out of ten the man who gets his wheat sold first gets the best market. In order to "get there," speed, coupled with general efficiency in threshing, is an essential point. The long established and favorably known firm of Stevens & Burns feel more than ever justified in congratulating themselves on the results of the past. Threshers and others report most satisfactorily on points of safety, durability, speed and general utility. They are better prepared than ever to meet the large number of calls for their improved Iron-clad J. I. C. Agitator Separators, and also for their wood and straw-burning Portable and Traction Engines. They also manufacture the Ertel Victor, double-acting, perpetual Hay Press, which they warrant to be the fastest, strongest and easiest operating baler ever made. This is the baler that in a recent competition baled eighteen tons in ten hours. Saw Mill Engines and Boilers, Circular Saw Mills, Chaff Cutters, Horse-power, and all kinds of Engineers' Brass Goods and Fittings are manufactured by this firm, and also the best combined Brick and Tile Machines made in Canada. Send for their catalogue, if you are in need of any of the above-mentioned lines.

M'CORMICK HARVESTING CO.

The McCormick Harvesting Co., of Chicago, is well known throughout the American Continent as one of the largest manufacturers of harvesting machinery. Since 1891, when Cyrus H. McCormick invented the reaper, what gigantic strides have been made from that first lumbering machine to that model of neatness and strength, the Steel Binder of 1893. This enterprising firm have established an agency in Winnipeg for facilitating the handling of their rapidly growing wholesale and retail trade in haying and harvesting machinery and twine (this being the only implement firm that manufacture their own twine). In a short season such as ours, when so much has to be accomplished in so short a time, if any profit is to be made out of the wheat crop, very much depends on the working of the binder. McCormick's "Machine of Steel," which for lightness, strength, durability and convenience has many points to commend it, may be regarded as a great factor in solving the problem: What Shall the Harvest Be? The McCormick Mower is also fast taking a leading place, and for strength and lightness of draught has few equals. Now that the season is drawing to a close, and all the points of harvesting machinery are fresh in the mind, send for McCormick's catalogue, so that you can study the many advantageous features claimed by them.

WATSON MANUFACTURING COMPANY, LTD.

Watson Manufacturing Company, Ltd., is the oldest established implement firm in Canada. The business was organized by Mr. Jno. Watson, the present President of the Company, in 1847, and in 1882, when the Manitoba business was being pushed, a Limited Liability Company was organized in order to handle the rapidly increasing business. From the small beginning in 1847, when the work was done by the President in one small building, where he was his own bookkeeper, moulder, builder, etc., the facilities for producing first-class farm implements have been increased, until to-day they have one of the largest and best equipped factories in Canada, and manufacture the largest line of implements made by any one firm in the Dominion. The Company have always made an especially good line of Grain Grinders, Grain Crushers, Horse-powers, Root Cutters, and Straw and Ensilage Cutters. The superiority of their ensilage cutters over any other make is evidenced by the fact that they have supplied their largest machines to the Dominion Government Experimental Farms at Ottawa, Brandon, Indian Head, and Agassiz B.C. While paying considerable attention to the lines above mentioned, the Company

also manufactures a full line of Harrows, Mowers, Rakes, Binders, Sleighs, etc. The Company are paying considerable attention to cultivating direct trade with the farmers of Manitoba and the Northwest Territories, and give prompt attention to all enquiries, letter orders, etc. They also carry full line of repairs at their Winnipeg warehouse for all machinery manufactured or sold by them.

ANDERSON & CALVERT.

The firm of Anderson & Calvert, who started in a comparatively limited way some years ago, now carry a full line of superior implements, among the foremost of which are the renowned Cornell Threshing Engines, the Advance and Champion Separators, the superior qualities of which are too well known to Manitobans to need any comment. Other specially meritorious lines which they handle are the Coulthard, Scott & Co. Drill and Seeder, of Oshawa, Ont., and the Dowagiac Shoe Drill, the "old favorite" Warrior Mower, and the American McCormick Binders and Mowers. They have sold a larger number of mowers and rakes this season than ever before, and while in conversation with the head of the firm we got a strong pointer on a subject the importance of which the ADVOCATE has been urging for years—that of mixed farming. Mr. Anderson tells us that it is particularly noticeable this year that in every district where mixed farming prevails, sales are better and payments more promptly made than in the districts devoted exclusively to wheat growing. The Wilkinson Plows, both walking and deal gang plows, are ever increasing in popularity, and the firm are prepared for a big fall trade. Millar's Disc Harrows and ordinary Drag Harrows, Bain Wagons and Challenge Sleighs, besides all lines of machines required to carry on a Manitoba farm. This firm enjoys a very large share of the retail trade in Winnipeg, and wholesales to local firms at all prominent points in the province and territories. As noticed some months ago in the ADVOCATE, some municipalities in the vicinity of Brandon have placed a high license on all pedlars, whether of shoddy cloth or of agricultural implements, so as to keep these agents out of the municipalities. It is with great satisfaction we note in the Winnipeg district that nearly all our leading firms have withdrawn their travelling agents, which, of course, will reduce the cost of conducting their business, and must take so many dollars off every machine sold, as none will deny that the farmer pays the salary of the travelling agent. We therefore think that the farmer acts in his own interests when he patronizes those firms that have no agents out through the country soliciting orders.

French Weed.

A subscriber at Kelloe Station, Man., sends us for identification a very healthy specimen of French weed, or stink weed, known to the botanist as *Thaspi arvense* (Penny-cress). This being the most formidable pest we have in Manitoba, every farmer should be thoroughly acquainted with its habits and know it whenever he sees it, so as to prevent its spread into new districts. "Forewarned is forearmed," we therefore reproduce the cut which appeared in the March, 1892, ADVOCATE, for the benefit of new subscribers.



In lands where this weed has obtained a foothold, no satisfactory method has yet been advanced to eradicate it; it is ten times as bad as yellow mustard or Canada thistles. Perhaps that looks a little strong, but we are prepared to stand by the statement, as from personal experience we know whereof we speak. Prof. J. H. Panton thus describes its characteristics: "Pods circular, flat, with broad wings, and a deep notch at the top; leaves oblong, arrow-shaped at the base, toothed and smooth; flowers white and small, plants about a foot high. It will mature two or three crops in the year, will bear seed from plants not over one inch high; the young green plants are not injured by winter's frost, so that it should be regarded with as

much dread as a mortgage, and eternal vigilance exercised to pull and burn plants of it wherever found. Several of the Farmers' Institutes in the west, notably Brandon and Virden, have specimens of the plants placed in frames and hung in all the feed stables, elevators, &c., &c., so that farmers may make its acquaintance before it makes theirs; this plan has worked well, and should be adopted in all new districts, either by the institutes or municipalities. Where this weed has a foothold, keeping the land absolutely clean and well worked with hoed crops for two or more years in succession is about the only plan we can suggest; if any of our readers have found a better plan we would be pleased to hear from them.

A Scotch Farmer's Views of the Ranches and Some of Their Hindrances.

Editor of the FARMER'S ADVOCATE:

I have for the last few months perused with pleasure and benefit to myself the columns of your valuable paper, therefore I hope that you will pardon me for writing you a few lines at this time. After a sixteen years' experience in stock farming in Scotland, I was forced last fall to leave my home and all my fortune behind me. I leased a farm for sixteen years, and as I took it when prices were at their best, the rent was very high, and having no break in my lease, and not being able to get it off my hands, I was obliged to fight on to the bitter end, with the result that I have lost £1,000 per annum in it, and had no redress whatever.

I arrived in Alberta in December of last year, with just the number of shillings in my pocket as I left thousands of pounds in the old homestead in Scotland. But to my purpose I managed, after three days knocking about, to get a situation as shepherd on a sheep ranch on the foot hills of the Rockies, where I am still. What I really wish to point out to you is the manner in which things are carried on here on the ranches, and the trials that the smaller ranchers at least have to undergo.

What struck me most, as a Scotchman, was the great conglomeration of breeds out here, no one flock being pure or having any pretense to such, Sheep as well as cattle having at least two or three crosses in them. Now, that practice is thoroughly and justly condemned by all stock breeders at home. I asked the reason why of several small ranchers, and the invariable answer was: "Could not afford to go east for a sire, the railway charges are so high both for man and for beast." Surely if the railroads wish to dispose of their lands, they ought to help poor settlers to get on in the world just as much after they have got them on their lands, as they are willing and eager to help them to fix on a place before. I shall just give you one example of what has come under my immediate notice as a sample of what may be done in the present state of matters. A rancher came to me the other day and asked my advice in the following case:—

"As I could not afford to go east and choose a bull for myself last season, a person who was bringing through a car of horses from the east offered both to purchase me a bull and to bring him through along with the horses. The bull duly arrived, and was used in the herd of some eighty cows but has turned out perfectly useless, and I am a loser to that extent." I said at once, "Do you know the breeder's name?" "Oh, yes, I have both his name and the bull's pedigree." I advised the gentleman to write to breeder at once, which was done accordingly. The reply was to the effect: "Am sorry to learn you have been so unfortunate with your bull. You ask me in letter if I remember him; yes, perfectly, he was of no use as a stock getter—he was sold for fat to go west." Now, sir, I ask you as our ADVOCATE, how in the name of wonder does it happen if the bull was sold for fat that the purchaser gets his pedigree handed over to him, when the bull is already known to be a failure. Surely pedigrees were not got up for such purposes, but to trace out a race and to keep it pure, etc. Is the breeder not very much to blame for giving such a bull a pedigree, when he knows that the bull is useless? Perhaps he meant no harm, but it was very injudicious, to say the least of it, and has cost an honest man no end of trouble, not to mention loss and expense.

Yours respectfully, T. B.

[NOTE.—In regard to the handing over of a certificate of registration for a useless bull that is sold for beef, we think probably, with our correspondent, no harm was meant, but it is a most unprofessional thing to do, and should be avoided by all breeders having any regard for their reputation.—Ed.]

Agricultural Exhibitions.

Hamiota.....	September 29th.
Fort Qu'Appelle.....	" " 29th.
Oak River.....	" " "
Broadview.....	" " "
Meadow Lea.....	October 3rd.
McGregor.....	" " "
Saltcoats.....	" " "
Cannington Manor.....	" " "
Pilot Mound.....	October 3rd and 4th.
Selkirk.....	" " "
Birdie.....	October 4th.
St. Francois Xavier.....	" " 5th.
North Plympton.....	October 4th and 5th.
Saskatoon, (Sask.).....	" " " "
Killarney.....	" " " "
Somerset.....	October 5th.
Wolsley.....	" " "
Yorkton.....	" " "
Portage la Prairie.....	October 5th and 6th.
Virden.....	" " "
Manitou.....	" " "
Shoal Lake.....	October 10th.
Neepawa.....	October 10th and 11th.
Stonewall.....	" " "
Wapella.....	" " 12th.
Rapid City.....	October 11th.
Gartmore.....	" " "
Carman.....	October 11th and 12th.
Crystal City.....	" " "
Red Deer, Alta.....	October 12th.
Battleford, N.W.T.....	October 12th and 13th.
Cartwright.....	" " "
Holland.....	13th.
Souris.....	October

N. B.—Secretaries of Agricultural Societies are requested to send us dates of holding their annual shows, so that we may have a complete list.

Bogus "Butter" Making.

A NEW SCHEME EXPOSED.

The FARMER'S ADVOCATE has repeatedly found it necessary to expose swindles perpetrated or attempted upon farmers, one of the more recent and familiar being the sale of "Black Pepsin." Casein, the principal solid of milk apart from butterfat, can be coagulated by either rennet or pepsin, and with the fat be worked into a compound resembling butter, but which is not honest butter, but a cheesy mess. Nor is that the only way of attaining the same dishonest result. Good standard butter contains from 80 to 85 per cent. of butterfat, and the man who deliberately incorporates 30, 40, or 50 per cent. of casein and water and sells it for the genuine article, is no better than the thief who robs his neighbour's hen roost or wood pile. These swindling schemes are alarmingly on the increase, and no sooner is one snuffed out than another springs to light. As in the case of the Red Lion wheat and similar frauds, there seems yet to be people quite ready to be duped out of good, hard cash in order to be let into some visionary scheme of making money by magic, but which really means that somebody is to be robbed. Another of this very sort is now being pushed by a so-called "firm" located in Toronto. They claim to have a "new patent process of making and gathering butter," by which from two to three times as much butter can be made from the same quantity and quality of milk as by the old method. With misdirected assurance they have written us as follows:—

Editor FARMER'S ADVOCATE, London, Ontario.

Dear Sir,—You will please find enclosed a circular and business card of our Canadian Patent butter process, which patent we received a few days ago. We should be very much pleased if you would mention some parts of it in the way of an editorial through your valuable journal, and no doubt the same would be very interesting to those who are subscribers. Our business advertisement we shall have ready soon after the Toronto Exhibition. Trusting we are not asking too much by this favor, we remain, yours truly,

The FARMER'S ADVOCATE finds it necessary to reject hundreds of dollars worth of such advertising as is referred to in the foregoing letter every year, but we do not mind devoting some editorial attention to these gentlemen, as they request, for the benefit of our readers. The circular admits that more butterfat cannot be got out of milk than it contains, but they get the extra amount of butter "by converting other solids in the milk into the form of butter." In other words, they want to teach dairymen how to make a something that looks like butter, that is to say, bogus butter. In the next paragraph the pretence is set up that the product would be a "healthier article of food" than butterfat and "equally as healthful as milk in its natural state," all of which is senseless rubbish. The impudent pretence is also made that this alleged butter will keep as well as that made by the standard honest process. Any good butter maker knows that to carelessly retain a lot of extra caseous matter is to invite the butter to go "off flavor" and decay, but as this stuff is only to be in the "form of butter" and not the real article itself, perhaps it may keep. So will a keg of sawdust. Agents are, of course, wanted all over the country to sell farm rights inscribed on "an elegant" lithograph license, at the very modest rate of \$3.50 per cow, and shop licenses at from \$50 to \$200 each, and one cent royalty on each and every pound made by the new process over what is made by the old method. Licenses run for one year only. It is all figured out nicely, how that \$33 worth more butter will be got from each and every cow per year over our present stupid, old-fashioned way. Full and very careful directions are given how to send these Toronto gentlemen the funds (they prefer a bank draft). We warn our readers everywhere to give these sharks a wide berth. Have no communications with them whatever. No honest dairymen can for a moment entertain the idea of promoting, either directly or indirectly, this secret process of "butter-making," and if attempted will certainly prove a delusion and a snare. As we have shown from the circular, it is fraudulent upon its very face.

The Champion Cows.

The three champion cows in the fifteen days' cheese contest at the World's Fair were the Jersey, Ida Marigold, owned by Mr. Sweet, of Buffalo, credited with 70.92 lbs. cheese, at a net profit of \$6.97; the Shorthorn, Nora, owned by Sheehan & Sons, Asage, Ia., 60.97 lbs. cheese and gaining 56 lbs. weight, with a net profit of \$6.27, and the Guernsey, Sweet Ada, owned by Mr. Eddy, Saratoga, N. Y., making 54.05 lbs. cheese, at a net profit of \$5.27.

Importance of Rendering Monthly Statements to Patrons of Cheese Factories.

There is no business carried on in this country in which so many people have a particular interest as in the manufacturing of cheese as operated under the factory system, and at the same time there is no business conducted less upon business principles. In a large number of our cheese factories we find patrons supplying milk week after week without receiving any definite statement as to the amount of milk they are sending. In a great many cases this is due to the patrons themselves, who neglect to look after their own interests and take it for granted that everything is correct. It is the proper thing, no doubt, to maintain this attitude of trust towards the factory and those in charge of the work; but, on the other hand, it should not be looked upon as a lack of confidence in the integrity of the cheese-maker or the management of the factory because a patron asks for a weekly or monthly statement of the number of pounds of milk supplied by him, pounds of milk required to make a pound of cheese, prices, or the amount of cut cheese received, and other necessary particulars. Our most successful cheese factories to-day, and the ones holding the confidence of their patrons, are those which endeavor to keep all parties interested in the business well informed by weekly or monthly statements on their business transactions. A pass-book sent out every week with the milk drawer is the means generally adopted for this purpose; this answers very well, and it is not much trouble to the cheese-maker or secretary to copy into the pass-book once a week the amount of milk supplied daily by each patron. The difficulty of this plan is with the patrons themselves who neglect to send in their pass-books at the proper time, and complain because after five or six weeks have elapsed the cheese-maker objects to fill in the back accounts. If the pass-books are filled in regularly every week or two weeks, as the case may be, and returned just as regularly by the patrons, a good means will be furnished of keeping all concerned posted concerning the business carried on during the season. Another good plan, and in many respects better than the pass-books, is to have weekly or monthly statements sent out giving a concise account of the month's business. These statements could be made out on printed slips to be filled in, and could be kept on file by the patron till the end of the year, when they could be used for comparison. There will be much more need of some such scheme in the cheese factories where milk is being paid for according to the percentage of butterfat. Patrons want to know, and they have a right to know, what their milk is testing and how many pounds of butterfat they are supplying each week or month. It will pay all cheese and butter factory companies and the managers of such factories to give particular attention to furnishing their patrons with correct and concise statements once a week, or at least once a month, of the amount of milk they supply, and all necessary information about the factory's business. Patrons will appreciate such efforts, and will have more confidence in the concern, if they realize that they are dealing with business men and that their factory is being run on thoroughly business principles. There is too great a lack in this respect in the transactions of some farmers, and if our cheese and butter factories were run more on business lines it would have a wholesome effect in stimulating farmers to make improvement in that direction.

Improving the Quality of Milk.

S. S. Lawrason, St. George, Ont.:—"Is it not possible, by a certain course of feeding, to increase the amount of butterfat contained in milk? I have noticed a statement, by an agricultural professor, to the effect that it could not be done, but I am satisfied that I can so feed my cows as to accomplish that result, and would like to have the question answered through the FARMER'S ADVOCATE."

Ans.—This subject was very fully dealt with in our issue of April 15th, but being a new subscriber since then, Mr. Lawrason probably did not see the article in question. In actual farm practice, as a general rule, we believe his contention to be quite correct, though, under certain conditions, an increased fat percentage may not follow an increase in the grain fed a cow. At the Vermont Experiment Station it was found, in feeding the waste products of corn, that a richer milk was produced in fourteen cases out of seventeen, and at the Colorado Station wheat bran increased the fat percentage. The Babcock and other tests have brought to light numerous instances where, by the judicious use of certain foods, dairy farmers have improved the quality of the milk produced by their herds. It has been commonly understood that a cow has what is styled a "normal capacity" of fat-production, up to which good care and a full and proper ration will bring her, though beyond that point, in a limited period of time at least, she would not be expected to go. But how many cows have reached that point? That one cow can be made to give as rich milk as another is doubtless not possible. Farmers must, therefore, breed for quality as well as quantity. The Babcock test is forcing many to do so.

Preparing Cheese and Butter for the Exhibitions.

The fall exhibitions will soon be here, and parties who pride themselves in the excellency of their products will be getting them ready for display. Too much attention cannot be given to having exhibits, and especially butter and cheese, done up as neatly and cleanly as possible. No matter how good the quality of the goods shown is, if taste and neatness have not been shown in arranging the exhibit, the chances are that instead of the goods taking first place they will take a second or third rank.

People very often say: If the quality is all right, the greasy cloth around the butter or the rough edges on the cheese should not prevent it from taking a first place. Cheese and butter are judged upon their market value and neatness, cleanliness and good taste—an important factor in determining what an article is worth in the commercial world.

All exhibitions are object lessons, and the neater and more presentable an object on exhibition is the more distinction does it bring the exhibitor. We had the pleasure while in Chicago of examining a few of the cheese for the July competition from the States of Wisconsin and New York; while some of the exhibits were neat and tasty, others were almost unrepresentable. In some cases it was surprising how dairymen could send cheese of such unsightly appearance to an ordinary exhibition, let alone to the World's Fair. Prospective exhibitors of dairy products at the coming exhibition will profit by giving attention to the following notes:—

- (1.) Have both the butter and cheese as fine in quality as they can be made.
- (2.) Do not send a cheese unless it is perfectly symmetrical and straight, without any projecting edges or cracked faces.
- (3.) Put the cheese in strong, well-made boxes, with covers that will fit on without nailing, if possible.
- (4.) Cleanliness should be particularly noted in arranging exhibits of butter. Use parchment paper for wrapping up the pound prints, or have the cloth covering them scrupulously clean and neatly arranged.
- (5.) Firkin butter should be put only in well-seasoned tubs, neatly put together. If some melted paraffine is run over the inside of the tub it will be air-tight, and keep the butter in a better condition. The top of the butter should be well-protected by a coat of salt, and the tub covered with a neat, tight-fitting lid.
- (6.) Care should be taken to have exhibits addressed to the proper parties, and shipped in time to reach the grounds so as to be properly arranged for display before the show begins. It is not well, however, to send them too early, but look at the railway time-tables carefully, and get all perishable goods at least sent off in time to reach their destination safely and no more.

Dairy Notes.

The Breeders' Gazette states that the death loss chargeable to the World's Fair dairy test already foots up a fearful total. Ten head have died—four Jerseys, four Guernseys, and two Shorthorns.

A writer in Hoard's Dairyman gives his experience with long and short ensilage. He says:—Last year his cutter, that was geared to cut a half-inch, went wrong, and a substitute had to be used that would cut 1½ inches as the shortest length, and the result was to convince him that he had better wait a considerable length of time and continue with a half-inch cutter rather than finish the filling with ensilage beyond that length. When the short ensilage was arrived at, the character was different and for the better. With the long cut there was a picking over of the silage and mincing by the cows that never takes place with the fine cut; more long pieces were left until the last, and a great deal more time was used in picking out the short pieces, instead of a rapid eating of ration which one likes to see. With the short cut the ensilage packs closer and settles more solidly, and, with a good distributor, needs little attention when filling, while the 1½ wanted directing to its proper place every once in a while.

Will it Keep?

Editor FARMER'S ADVOCATE.

I have been told that it is not necessary to sour my cream before churning, and that sweet cream butter will have just as nice a flavor and keep as well as when made from cream slightly acid. Is this the case? I have been doing very well with my butter, and do not want to make any mistake now.

MIDDLESEX DAIRYMAID.
Ans.—Unless you churn sweet cream at a much lower temperature you will lose considerable butterfat. It also requires longer churning. The flavor will be milder than that of acid cream butter. If properly made, sweet cream butter will keep almost as well as sour cream butter. In some tests it has kept equally well, and in time appears to take on the sour cream flavor. Better follow the old plan.

The Massachusetts Ploughman says:—The farmer who complains that his cows are unruly merely advertises his own neglect to furnish good feeding for the animals. Cows do not jump fences merely to show their agility or for exercise—unless to get a chance to exercise their jaws and digestive apparatus. The unruly cow believes in the doctrine of self-preservation.

Dentition and Dental Diseases of Farm Animals.

BY DR. MOLE, M. R. C. V. S., TORONTO, ONT.

In order that veterinarians and judges of stock may be in a position to decide as to the age of any animal, a knowledge of the growth of the teeth is invaluable.

A breeder's certificate would afford the most reliable evidence of an animal's age, if scrupulous exactitude in recording the birth were practiced, but the failing to note time and exact date of birth is inherent in the ordinary farmer. He generally refers the occurrence to some event that occurred in the family just about the same time, and so evidence of a certificate is often more calculated to mislead than assist the judgment. It therefore becomes necessary to supplement or correct the exhibitor's certificate by such evidence as the animal itself affords, and by common consent the periodical changes to which the teeth are subject are accepted as indication of age only second in value to positive proof of the date of the animal's birth. We shall not describe minutely the anatomical structures that make up the teeth, but only those parts that are necessary to understand the subject.

The cheeks or sides of the mouth are lined with mucous membrane, on which the ducts of the uccal glands pour their secretions. We may distinguish the opening of the parotid duct, generally about opposite the third molar tooth which secretes the largest quantity of the saliva necessary for deglutition or swallowing; it also acts chemically on the starchy matter, and is the largest gland of the mouth.

On the roof of the mouth the mucous membrane is thick, and in the cow and sheep is known as the dental pad; it causes that particular condition known as "lampass" in horses, which is due to a congested state from dental or stomach irritation. That portion which is attached to the hard palate, from which a number of grooves or ridges run in a direction outwards, is termed the "bars."

Occupying the outer margin of the roof and floor of the mouth we see the teeth. These are products of mucous membrane, and by some anatomists considered bones. One material difference between bone and the teeth is: that the latter bear exposure and friction with impunity, while the former can endure neither without becoming diseased. They are also much harder than bone, and, further, fixed in cavities, which are surrounded by the gums. They vary in number in different animals, and in size, form, structure and position; thus, in Herbivora they are termed compound; in Carnivora, where tearing is requisite, the molars are sharp and pointed; and in man they are mixed, and in all the lower animals there is an interdental space.

They present three parts: A fang, that part enclosed in the alveolar cavity; crown or table, that part visible on inspection after the teeth are fully developed; neck, that part connecting the fang and the crown, to which the gum is attached.

Teeth are composed of three substances:—Dentine, enamel and crusta petrosa. Dentine constitutes the major part the tooth, and is of a yellowish substance, best seen in the elephant, when it assumes the form of the well-known tusks of ivory.

Enamel, the second tooth material, crusts over the dentine of the body and dips into the cavities of the tables; it is known by its pearly whiteness, and is the hardest animal texture known.

Crusta petrosa is externally placed, and dips into the enamel plates of the table; it is of a yellowish brown color, and is the softest dental structure.

The upper surface of the tooth generally presents one or more depressions, the infundibulum, into which dip the three layers of substance of which the tooth is composed. When a tooth is wholly covered on its external surface with enamel, it is termed a simple tooth; all other teeth are compound. Thus the milk or temporary teeth, and the teeth of the dog, are termed simple teeth; they are named, according to their function, grinders and pinchers or incisors.

For convenience of description teeth are divided, according to their situation in the mouth, into four sets: incisors, canines, pre-molars and molars.

Ungulate mammals—that is, hoof-shaped animals—without exception, have on each side above and below three incisors, one canine, four pre-molars and three molars; that is, eleven on each side above and eleven below, or forty-four altogether. The modern horse, as you must know, has only forty; the front teeth are the same, six above and six below.

The canines or tusks are present, as a rule, only in the males, and fully developed in the stallion.

The cheek teeth, or pre-molars and molars taken together—for there is little difference to distinguish them in form and size—are generally but six, instead of seven, on each side above and below. Here is a case of specialization by suppression. One of the teeth of the ancient form has disappeared; which is it? The examination of a series of fossil remains show us, that the first of the series, the anterior pre-molar, is missing, and known among horsemen as the wolf's tooth. We frequently hear veterinary dentists, horsemen and others discourse very learnedly about these teeth, and yet we can see that they are merely the teeth in a state of evolution. Grooms, horsemen and trainers consider them highly injurious, and attribute all manner of complaints to their presence, such as inflammation of the eyes, coughing, indigestion, etc. At the

present they are recognized as the simple representatives of those organs, which in other animals render the teeth an unbroken curve; they generally disappear when the shedding of the molars takes place.

Dentition covers that period which the young animal takes in cutting its teeth—from birth to the age of five years, and there is a relative period of duration of the life of all animals. Thus man will be cutting teeth until the age of fourteen, and the evolution of the molar teeth does not usually take place until the system has acquired its full development, which will be at the age of fourteen; six times that period will make the age eighty-four, and is limited to a single act of reproduction in the case of the ordinary milk teeth, and to a double one in that of the permanent molars. The process of budding then ceases in man. In many animals of the lower class the process goes on through the whole life without any limit. By a process of this kind the continual renewal of the teeth takes place, the base of the pulp cavity remains unconverted, and the new cells are constantly being secreted, and thus the tusk or tooth is continually lengthening at its base, which compensates for its usual wear at its crown or summit. If anything should prevent that wear, as when the opposite tooth decays or is broken off, there is an absolute increase in the length of the tooth, from the continued growth at its base, and it becomes a source of inconvenience to the animal.

The horse takes four years to develop its teeth, and may live six or seven times its age of development—say twenty to thirty, the average being eighteen years, although there are some historical records of horses living to sixty-five. But we are of the opinion that there must be some error, although there is no doubt that mares live longer than horses. The same fact is noticed in the human race, where women live longer than men. Those animals that do not attain maturity until six or seven years of age may live to twenty and still be healthy; and an undoubted case is as follows. "We have kept a record of many, and the history of the following case seems hard to beat:—August 3rd, 1874, died Mr. Joseph Kaye's well-known roan horse, Paramatta. Three owners possessed this horse—the first had him seventeen years, the second had him for a like term, and the third had owned him nineteen years, when he died; this makes a period of fifty-three years. Old Paramatta was able to do little jobs quite up to the last years of his life."—Veterinary Record.

The heavy draught horse, which attains this growth in even less time than five years, is aged at ten or twelve.

Examples of horses at thirty, thirty-six, or forty, would not be so rare if the tyranny, hard usage and maltreatment imposed them by unfeeling man did not aid greatly to shorten their lives.

Ordinarily, as soon as a horse has seen its best days it is sold from stable to stable, goes rapidly into the hands of the hackman or livery keeper doing harder work on less nourishing food, until completely used up and depreciated to the value of the hide at the bone yard; whilst a kind, humane owner will work and keep his horse well and fit for years, doing a vast amount of work—so that "used up" has become the horse term for "aged" in man.

To any one accustomed to horses it is an easy matter to distinguish at sight the very young from the adult animal, and the middle-aged horse from a very old animal. There are many signs that will indicate an aged animal; white hairs commence to show around the temple, around the eyes and nostrils, if the color be dark, while the grey, roan and chestnut become much lighter, and even white. In addition to the teeth, there are many signs not usually known—points of great value, but none compare in exactness to the appearance of the teeth.

The Arabs consider that if the skin on the forehead below the forelock is elastic and returns to its original position rapidly, becoming perfectly smooth, the animal will make a good horse; if no wrinkle, is left the animal is young; if the skin remains wrinkled, it is old and worthless. Another old-fashioned method was to determine the age by means of the knots in the tail. These knots are felt distinctly at the base of the tail when the horse has attained thirteen years of age; in two years later they become more prominent—they have behind a distinct little depression. At sixteen a second pair of knots are found, which, like the first, in about two years have behind them a distinct depression, but there is no practical value in these appearances, for it requires a long period of experience to be able to determine them.

Anyone who has been accustomed to examine the mouths of horses of one section of country will find that he must extend his ideas and adapt himself to new conditions when called upon to judge of the age of a horse from another region, as no two horses' mouths present exactly the same characters.

If a horse's mouth presents exactly the period of its age, or a certain number of years of growth, we say that it is so many years; if it has not quite attained the age, we then describe it as rising to the year; if it has passed the period, and has not attained the marking of another year, we say so many years off.

The natural division of the two periods of age as indicated by the temporary and permanent teeth is sub-divided as follows:

- 1st. The period of eruption of the incisors of first dentition.
- 2nd. The levelling of these teeth and their progressive use.

3rd. The period of the falling out of the milk teeth, and the appearance of the permanent ones; the levelling of these later.

4th. The successive forms which these tables present as the teeth wear away.

There are few in this country who have ever seen a horse with a "bishoped" mouth, as it is a method employed by gypsies and low horse chaunters to alter the appearance of the incisors, which can only deceive those who are entirely ignorant of the teeth of the horse's mouth, and is not likely to deceive anyone familiar with the anatomy of the subject. The operation is dignified by the term "bishoping" from the name of its inventor. To make the operation successful, it is too laborious and expensive to be often performed. The method is as follows:—The crowns of the incisors of the young animals are wide from side to side, the dental tables are modified as the animal becomes older, and become successively oval and triangular, in the centre of the table the dental star appears. "bishoping" consists in giving to the table an artificial cup of a dark color. The teeth are usually filed even, each table is then gouged out until concave; the new cup is then blackened by nitrate of silver, or by a point of hot iron. It may readily be recognized by careful examination; the file marks are invariably left, and the artificial blackened cups are always anterior or in front of the remains of the real mark surrounded by the enamel; the tusks are usually filed to a point, which is an unnatural shape.

For all the arts of deception the practice of "bishoping" is to be held as an example of labor lost; we have not seen a case since we were in "dear old Ireland." There in almost every horse fair one or two specimens of an ancient race may be seen, decked out in ribbons, tail braided, and mane plaited as only an Irishman can do it; with a fig of ginger, and a liberal cracking of the whip, an old animal is made to look so that its own mother would never recognize him. They generally call attention to the black mark in the corner tooth. We well remember the tale told by one of the ancient and fast disappearing class of horse chaunters:—

"Sure, and yer Honor is a good judge of a beast; he is a foine leaper, and ee's young. Sure, and yer Honor knows that when a horse has the mark on his tooth, he can't be more than five years old." "Nor less than fifteen, when it is placed there by Culoon of Armagh," was our reply. There is also another method of deception practised there, and known as "puffing the glynis"; it consists of blowing out the temporal fossae above the eyes with air, but is only very temporary, and sometimes leads to very dangerous results.

The enamel of the teeth is hard, brittle and readily fractured; is protected by two layers of crusta petrosa, so that in wearing it always presents a fine cutting edge. It has been likened to a brick-layer's trowel, which is, as most mechanics know, two layers of iron enclosing a layer of steel in the centre. For cutting bricks iron would be too soft and steel would be too brittle, so, in order to protect the steel a layer of soft iron is placed each side. That is as nearly like the composition of the teeth of the horse as possible, only that we see we have six layers composed of three different substances—crusta petrosa, dentine and enamel. In the incisor temporarily up to eight years old, and permanently in the molars, the temporary layer is shown in the accompanying illustration.



A five-year-old permanent incisor will take on the appearance as shown in this sketch, and the various changes are to be seen and can be readily followed. At five years old the crown will be seen marked with the infundibulum, which is usually filled with food, but can be readily removed, showing the cavity; as years pass over the crown becomes worn, and at eight years old this mark is worn out of all the incisor teeth, and the tooth alters in shape, taking on an oval form at ten years old, while at fifteen it is quite angular and square in shape.

Butter Making in Alberta.

BY T. M. M.

One of the most important industries yet established in Alberta is the Big Hill Springs Ranch and Creamery, owned and operated by Messrs. D. M. Radcliffe & Co. The ranch contains five sections of land, and is beautifully situated in the Cochrane Valley, twenty-four miles west of Calgary. The creamery, a log building, sixteen by thirty-six, with lean-to or ten feet, is at the foot of the innumerable springs from which the place takes its name, and which makes it such a desirable locality for the work. The building is divided into three compartments, the first being the work room, where all the skimming, ripening and cleaning up are done, and which contains a large heater and hot water boiler. The centre or churning room is the most interesting, as there the gilt edge is manufactured. This room contains the large barrel churn and butter worker, both of them run by water power, and there, too, the printing out and wrapping are done ready for shipment. The whole machinery is run by one of the old-fashioned over-shot water wheels, driven by the water from the springs, and connected with it by a wooden flume one hundred feet long. The whole machinery utilized in the work is extremely simple, and nearly all home-made, but it is all that is necessary. The third is the vat room, in which the milk in the deep-set cans is placed in the cold spring water after being brought in from the stables. A pipe four inches square carries the water from the springs into the vat, and another the same size carries it out again on the other side into the creek, thus insuring a constant supply of fresh, clear water.

Mr. Radcliffe is at present using the milk of fifty cows, but expects the number to be increased to sixty-five.

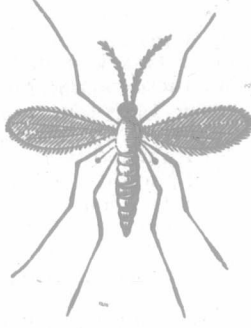
Beam Bros., who live near, are now beginning to send in the cream of thirty cows, and next year they hope to be able to double the number. Messrs. McKay & Baldock are also putting in some sixty cows for next season's work; in fact, a large number of the people of Alberta are now wakening up to the fact of the great importance of the dairying industry in the Northwest, and beginning to realize that in diversified farming in a country which offers so many facilities lies their future success.

Although only established two years, the output of the creamery is already favorably known from Vancouver in the west to Winnipeg in the east, and the consumption is now so great that Mr. Radcliffe cannot anything like supply the demand. The Hudson Bay Co. handle all the produce in Calgary, and they also ship it by express to Vancouver, where even at fancy prices the demand is greater than the supply. The output is now about three hundred pounds a week, or one hundred and fifty pounds per cow for the season, and before next year they hope to add many improvements, which will greatly increase the facilities for working on a much larger scale. Besides the creamery, Messrs. Radcliffe & Co. have on the ranch about 250 head of cattle and 16 horses, among which is a registered stallion. The cattle are mostly Shorthorns, bred for both milk and beef; the horses, half-bred Clydesdales, combining all the qualities of a good, all-round horse, the foundations of both having been brought from Mr. Radcliffe's old home in Whitby township, Ont. Like the creamery, the rest of the buildings on the ranch are of logs, which can be procured a distance of twelve to fifteen miles from home. These comprise two cow stables, 23 by 74, with room for eighty cows; horse stable, 30 by 54, holding twenty head, with box stall for stallion; implement house and wagon shed, 16 by 52, adjoining which are four box stalls for bulls and calves; hog house, 16 by 26; also, men's shack, 12 by 36, and dwelling house, 20 by 36. Mr. Radcliffe has the plans drawn out for a new dwelling house, cow stable and shed, and the men are shortly to commence work. These he hopes to have completed by next summer, and they will add very materially, not only to the look, but the comforts of the place. The house is to be a large, comfortable, two-story building, with all the modern conveniences. The cow stable and shed are both to be on a very mammoth scale, the former 38 feet wide by 182 feet long, the latter 24 feet wide by 210 feet long. During the winter the milking cows are all housed and fed twice a day, the dry ones being allowed to run in the herd with the young stock, and they too are brought in and fed once a day in the open sheds. This system of feeding necessitates the putting up of about 300 tons of hay each season, but this amount is got with very little difficulty on the ranch itself, and Mr. Radcliffe in this as well as everything else, shows his wisdom, recognizing that it is the well-fed, well-cared-for stock which is only profitable for dairying. Besides his other irons in the fire, Mr. Radcliffe intends fattening two carloads of stock for the Vancouver market this winter, and this will be the first income from beef cattle since the formation of the herd. It would not do to close an article on the Big Hill Springs Ranch and Creamery without mentioning the name of Mrs. Radcliffe, for she it is who is most to be praised and congratulated for the success of the creamery work. In her younger days she took some good practical lessons in an Ontario creamery, and to her energy and wise supervision must be attributed the success which has attended the business since its establishment.

Hessian Fly, Joint Worm and Autumn Web Worm.

Among the most destructive pests that have visited our country this summer are the Hessian Fly and the Joint Worm, about which we have had several letters. The Autumn Web Worm is also very numerous on the fruit trees, as well as others, throughout Ontario.

The Hessian Fly is supposed to be an indigenous insect, the belief from which it receives its proper name—that it was introduced into the States by Hessian troops during the revolutionary war—being now dispelled. It is, however, a fact that it was first noticed in the States in 1776. It was seen at Quebec in 1816, and in this province in 1846, since which date it has been a frequent and unwelcome depredator upon the fall wheat crops, few years passing without notice of its presence being announced from some quarter. Its body is of a dark brown color, about one-third of an inch long; the wings are of a dull smoky brown, and the legs are a paler brown than the body. The maggots appear in the "flax seed" condition.



It appears first in the fall at the root of the fall wheat plants, its eggs are laid and the larvæ hatched out below the surface of the earth on the root, and there they remain all winter, the brood appearing in spring. There is a second brood in the spring which attacks the stalk, where the insect is most generally noticed. Farmers hardly ever observe the insect at the root, but every one who has observed it has seen it on the stalk.

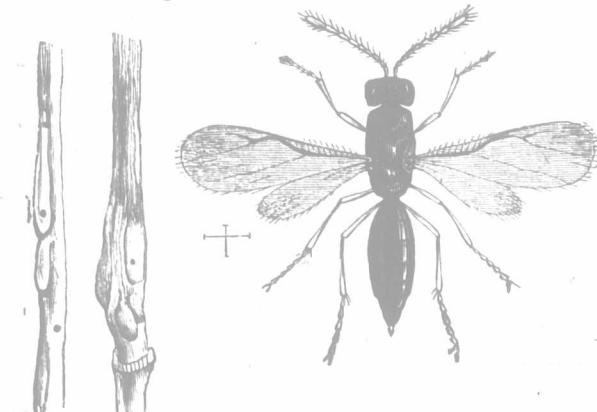
It attacks the stalk just above the first or second joint from the root, where it is enveloped by the leaves. The larvæ vary in color at different periods of their existence, being very pale at first, but afterwards of a deep chestnut color. Their first attack is made when the stalk is very tender and green, and they puncture it to extract the sap, the results being to cause a small depression, where the larvæ remain. There may be five or six encircling a single stalk at one time, and the result of their combined efforts is to weaken and finally to break it, causing it to fall down, thus ruining the grain.

After the larva has fed for a considerable time upon the stalk, it assumes what is called the "flax seed" state, resembling in color, size and general appearance a grain of the ordinary flax seed. In this state it continues for a considerable period, and it is carried from the field to the granary while in this condition. It is a much discussed point as to what this "flax seed" stage exactly is. It is looked upon as the pupa stage, but how it is produced, being so different from the form common among insects, has not been determined upon by entomologists, some thinking that the "flax seed" covering is the pupa stage, and others that it is an exudation from the body. The Hessian Fly attacks the stalk solely, never the ear.

Every successful wheat grower will readily admit that one of the most effectual preventatives of the ravages of wheat insects is a rich soil, thoroughly tilled. It invariably happens that the crop is most seriously injured on lands that have been carelessly tilled, and have become impoverished by an exhaustive course of cropping.

Prof. Cook, of the Michigan Agricultural College, states that when the season approaches the flies will lay their eggs upon the first suitable plant they can find, and recommends sowing a narrow strip of wheat around each field in August, or early in September, and deferring as long as the season will permit sowing the wheat from which the crop is to be obtained. By this means the wheat sown in the strip will make its appearance first, and most of the eggs of the fly will be laid upon it, after which period it should be plowed in very deeply, that the eggs may be destroyed and the later wheat then sowed. The outer strip may then be included also. This method, if successfully carried out, will destroy the fly and protect the wheat at the same time. Hardy varieties that tiller out well are able to withstand backsets of any kind. The use of lime, soot or salt is also recommended.

Joint Worm.—There has never a year passed since our recollection that the effects of the Joint Worm have not been visible in the grain fields, but up till quite recent years the damage has been so limited that there has been little cause for alarm to the cereal grower.



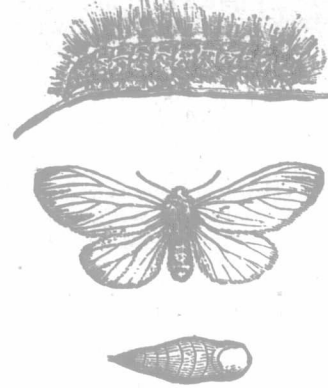
The maggot of this insect is but little more than one-eighth of an inch long, and of a pale yellow

color, with the exception of the jaws, which are a dark brown. It inhabits a little cell which is situated in the internal substance of the stem of the affected plant, usually but a short distance above the first or second knot from the root, the outer surface of the stem being elevated in a corresponding elongate blister-like swelling; and when, as is generally the case, from three to ten of these cells lie close together in the same spot, the whole forms a woody enlargement, honey combed by cells, and is in reality a many-celled gall. In each of the galls can be seen little pinhole aurifices, through which the flies passed when the Joint Worms have escaped. At first these little knotty swellings of the stem are apt to elude observation, because of being almost always situated just above the joint or knot on the stem, whence comes the popular name "Joint Worms". They are enveloped and hidden by the sheath of the blade, but on stripping off the sheath they become at once very conspicuous objects.

The mode in which the Joint Worm produces its destructive effects upon small grain may be readily explained. Not only is the sap extracted on its course to the ear, in order to form the abnormal, woody enlargement or gall in which the larvæ are embedded, each in his own private and peculiar cell; but a very large supply of sap must be wasted in feeding the larvæ themselves. Hence the shrivelling of the ear.

The Joint Worm makes its appearance during the fore part of June. After coupling in the usual manner the female fly proceeds to lay her eggs in the stems of the growing grain. Leaving a long stubble and burning it is the most effectual remedy yet discovered.

Fall Web Worm.—The appearance of webs or "tents" upon fruit and other trees in late summer and in early autumn has caused many to suppose there was a second brood of the tent caterpillar. These late webs belong to a very different insect, which lays her eggs in a cluster upon a leaf near the end of a twig, and the young caterpillars, like those of true tent makers, begin to spin as soon as hatched, and as they feed and spin in company, the web formed by their united efforts soon becomes conspicuous. The worms descend the branches, devouring the pulpy portions of the leaves upon



them, and form a web as they go. When they have made their growth the caterpillar ascends to the ground, where, just beneath the surface, they enter the pupa state; the next summer they issue as pure white moths to lay eggs for another brood. The worm or caterpillar is of a pale or yellow color, with a broad, dusky stripe along the back, and a yellow stripe along each side, and they have numerous whitish hairs. While the Fall Web Worm often attacks the apple and other fruit trees, it does not confine itself to the orchard, but its web may be seen in autumn upon various kinds of trees, as well as on shrubs and flowers. The only remedy is to destroy the web wherever it may be seen, and as the worms never leave the nest this is quite sure to be effective.

We would advise our readers not to neglect to destroy all the webs and worms that appear on their trees and shrubs; by so doing they not only save the tree that is now suffering, but next year's web worms will thereby be very materially decreased. The task is easily performed by hand—a pair of leather gloves makes it less disgusting. Care should be taken to destroy every insect; where the web has not grown so as to envelop large limbs, it is a good plan to carefully cut off the affected part and burn it. The worms lie very close, some may easily be missed when destroying the web.

Another Suggestion.

THE FARMER'S ADVOCATE, Winnipeg.

I observed in your last ADVOCATE some remarks re sheep in Manitoba, and expressing a hope that "The Farmers' Provincial Loan Company" would make one of their specialties the loaning of money to farmers for the purchase of sheep. I would also like to suggest that they should make advances for purchases of dairy cattle where proper steps are being taken for the establishment of a creamery or cheese factory. I am satisfied money loaned in that way would be as safe and even safer than on real estate. Something of that kind is needed to get such things started. I know there are many in our district, which is particularly adapted for dairying, having abundance of water and pasturage along our rivers and creeks, who are anxious to make a move along these lines, and the principal difficulty will be getting in the stock; still we are going to see what can be done. Some such scheme as you suggest as to sheep would apply to dairying. I enclose card, as I want the address of the proposed Farmers' Loan Company, that I may communicate with them. I am sure we can count on your good word for such an undertaking.

W. B. UNDERHILL, Melita.

THE QUIET HOUR.

The Starless Crown.

They that turn many to righteousness shall shine as the stars for ever and ever.—Dan. XII., 3.

"Wearied and worn with earthly cares, I yielded to repose, And soon before my raptured sight a glorious vision rose; I thought whilst slumbering in my couch, in midnight's solemn gloom, I heard an angel's silvery voice and radiance filled my room, A gentle touch awakened me—a gentle whisper said, 'Arise, O sleeper, follow me;' and through the air we fled. We left the earth so far away that like a speck it seemed, And heavenly glory, calm and pure, across our pathway streamed. Still on we went—my soul was rapt in silent ecstasy; I wondered what the end would be, what next should meet mine eye. I knew not how we journeyed through the pathless fields of light, When suddenly a change was wrought and I was clothed in white. We stood before a city's walls, most glorious to behold; We passed through gates of glistening pearl, o'er streets of purest gold; It needed not the sun by day, the silver moon by night, The glory of the Lord was there, the Lamb Himself its light. Bright angels paced the shining streets, sweet music filled the air, And white-robed saints, with glittering crowns, from every clime were there; And some that I had loved on earth stood with them round the throne. 'All worthy is the Lamb,' they sang, 'the glory His alone.' But fairer far than all beside, I saw my Saviour's face, And as I gazed He smiled on me with wondrous love and grace: Lowly I bowed before His throne, o'erjoyed that I at last Had gained the object of my hopes—that earth at length was past. And there, in solemn tones, He said, 'Where is the diadem That ought to sparkle on thy brow—adorned with many a gem? I know thou hast believed on Me, and life through Me is thine; But where are all those radiant stars that in thy crown should shine? Yonder thou seest a glorious throng and stars on every brow; For every soul they led to Me they wear a jewel now. And such thy bright reward had been if such had been thy deed, If thou hadst sought some wand'ring feet in path of peace to lead. I did not mean that thou shouldst tread the way of life alone, But that the clear and shining light which round thy footsteps shone Should guide some other weary feet to My bright home of rest. And thus in blessing those around, thou hadst thyself been blest.'

The vision faded from my sight, the voice no longer spake, A spell seemed brooding o'er my soul which long I feared to break, And when at last I gazed around in morning's glimmering light, My spirit fell, o'erwhelmed beneath that vision's awful might. I rose, and wept with chaste joy that yet I dwelt below, That yet another hour was mine my faith by works to show, That yet some sinner I might tell of Jesus' dying love, And help to lead some weary soul to seek a home above. And now, while on the earth I stay, my motto this shall be, 'To live no longer to myself, but Him who died for me!' And graven on my inmost soul this word of truth divine, 'They that turn many to the Lord, bright as the stars shall shine.'

Lonely Workers.

Many Christians have to endure the solitude of unnoticed labor. They are serving God in a way which is exceedingly useful, but not at all noticeable. How very sweet to many workers are those little corners of the newspapers and magazines which describe their labor and success; yet some, who are doing what God will think a great deal more of at the last, never saw their names in print. Yonder worker is plodding away in a little country village; nobody knows anything about him; but he is doing his best to bring souls to God. Unknown to fame, the angels are acquainted with him, and a few precious ones whom he has led to Jesus know him well. Another has a little class in the Sunday-school; there is nothing striking either in her or in her class; nobody thinks of her as a very remarkable worker; she is a flower that blooms almost unseen; but she is none the less fragrant. There is a Bible-woman; she is mentioned in the report as making so many visits a week; but nobody discovers all that she is doing for the poor and needy, and how many are saved through her instrumentality. Hundreds of God's servants are serving Him without the encouragement of man's approving eye, yet they are not alone—the Father is with them.

WHAT TO FEAR.

The only failure that a man should fear is failure in cleaving to the purpose he sees to be best. As to just the amount of result he may see from his particular work—that's a tremendous uncertainty; the universe has not been arranged for the gratification of his feelings. As long as a man sees and believes in some great good, he'll prefer working towards that in the way he's best fit for, come what may.—George Eliot.

MEASURE NOT THE WORK

Until the day's out and the labor done; Then bring your gauges. If the day's work's scant, Why, call it scant; effect no compromise, And honor us with truth if not with praise. —Mrs. Browning.

FAMILY CIRCLE.

My Wife's Son.

BY DAISY RHODES CAMPBELL.

I was about to be married. In spite of the fact that I was no longer a young man, with youth's hopes and fancies, and rush of passionate emotions, I was very happy. Indeed, that seems a mild way of describing the state of my mind, which might better read: I was supremely happy.

The case was briefly this: Constance and I had been lovers in the past. We seemed made for each other. I know that this is a common declaration among lovers, but there were others beside myself—cooler, dispassionate onlookers—who said the same thing. Our tastes were singularly congenial. We loved books, about which we only differed enough to save our discussions from monotony. We both—while for various reasons unable to indulge greatly in it—were fond of travel. We loved music, although Constance was the only practical musician. Her voice was a rich, powerful contralto, highly cultivated, and with a sympathetic quality which thrilled one's heart in listening. What I admired in my sweetheart was her freedom from narrowness of soul.

Constance Werner seemed literally incapable of small or petty actions; she seemed to live far above the gossip, the malice, the little meannesses of our common human nature. It was this, which after the first desperate "falling in love," bound me to her by the added ties of respect and honor. And yet, after saying all this, a day came of which even now I cannot bear to think. We had a terrible misunderstanding; everything seemed to conspire to help it on. A large part of the "everything" was Constance's parents, who from the first had not favored our courtship. They sent her away immediately to California to visit a gay young aunt of hers in San Francisco, who had always been the young girl's admiration. The next thing I heard—a year or so later—was Constance's marriage with a prominent business and society man of Sacramento—Henry L. Starr.

I never new, until I saw the notice of that marriage, how much hope I had cherished—now that dream of my life was over.

Instead of travelling, as the wealthy do in sorrow, I was obliged to work hard. It proved a tolerable panacea for heart-ache, and as years went on I accumulated a small fortune. My wants and expenses were few, and I gave my whole attention to my business, which was nothing more interesting than hardware.

I wondered sometimes if dealing in this branch of industry were not having its effect on my character. It was a fancy, but I knew as a fact that I was neither as sympathetic nor as kind as I had been. At first I did not mind this. What mattered anything so long as I made a success of my business? It was all there was left to me, and the lack of the softer virtues only made success the more assured. But in time I felt differently. Some way we come actually to be married after all! I had to say it over and over to myself many times to comprehend it, and even then I failed. Although, as I said, I was no longer young, my pulse beat much more rapidly, and a sudden choking came into my throat when I met her in the library just before we were to go down into the parlors, where the minister and a few friends were to see us made one.

I can see her now—this woman who was so much to me—as she came to meet me across the pretty room. She was of a tall and queenly presence, and carried herself superbly. Her hair was dark and abundant; her face fine rather than beautiful, with deep gray eyes, which could express more than any other eyes I ever knew.

"Constance," I said, as I drew her toward me, "can you trust me with so much?"

Her steadfast eyes met mine with a look which thrills me even yet to remember. "I shall never doubt you again, Christian," she said. "I shall love you and trust you till death parts us."

If there is much to be missed in the marriage of older folks, is there not present something which young people cannot feel? While the illusions of hope, if not gone, are at least soothed, there is a calm assurance, a conviction that, having had experience, you are now certain that this step is to be the happiest of your life; that this woman by your side is not only your merry companion, but your tried and faithful friend—a matured woman, with all the charms and beauties of a character moulded and perfected by life's school and the added years, which must be lacking to younger lovers. At least this is a slight glimpse into my own feelings, as I stood that morning, solemnly pledging myself to cherish and love this woman whom I had already cherished and loved so long in my heart.

I had already congratulated and a dainty wedding breakfast, which my wife's mother, reconciled at last, in a measure, to her daughter's miserable taste in matrimonial wares, had taken pride in having a marvel of taste and excellence. We left soon after for a lengthy wedding trip, which to me at least was a series of pleasant days and fresh and unexpected discoveries into the wealth of my wife's nature.

After our return my wife and I settled down in a pretty home in the large town where I was in business. Constance's taste was such that she made of those bare rooms a dream of beauty and coziness. I could find, and my reward was a hundred-fold in the music with which my wife feasted me when I came home from the worries and friction of my daily routine at the store. I began to realize something of what I had missed all these years, and I determined to enjoy my present happiness to the fullest extent possible.

But in the realization of this there was one drawback. If I have said nothing of Constance's son beyond the merest mention of his existence, it is not because he was unimportant to me. He was tall, fine-looking boy of about fifteen. I have already said how little there was that was noble in my nature, and it was a decided proof of this, that from the first I disliked this boy. I struggled against it, but the feeling was there, cover it up as I might. If he had looked more like his mother I might have been more drawn toward him, but from a picture I had seen of his father I knew that Donald's feelings, and I was full of shame at the discovery, but I never looked at Donald that something did not rise up in my heart against him. The boy did not like me. I knew, though he was always polite and pleasant to me. There seemed a barrier, invisible, yet real, always between us. I tried to forget Donald when we were on our trip—he stayed with his grandparents—but as soon as we were settled he was sent for. I tried to be kind and just to the boy. I thought that I was, but I could not like him, and he was quick to feel it.

If Constance suspected the state of feeling between us she never hinted at it. She was very fond of Donald—surely I was not jealous of that young fellow, her own son! But I confess I did not enjoy seeing her caress him. The boy seemed shy and

reserved, and I mistrusted him. I had been such a different boy myself, I thought he must be deceitful. He was an obedient boy. Constance was always most careful to defer to me, and to have Donald come to me for permission to do certain things. He attended the High School, where he stood unusually well in his studies. It was after his graduation that I proposed to Constance to send him to college at my own expense.

"Let me do this for Donald; I know he is longing to go, and then his own money can lie untouched, to be ready for him when he is through his school-days!" I said, hardly liking to meet my wife's clear gaze for fear she would see the eagerness with which I longed to have Donald away from home.

A quick look of pain came into Constance's eyes, and she turned away. But only for a moment. "You are very kind," she said. "Donald must go somewhere to college, and I shall talk it over with him to-night, and tell him of your generous offer."

"Don't!" I said impulsively. "Let the boy go unhampered by any sense of obligation; let him believe it is his own." Constance hesitated. "I hardly like concealment of any kind," she said doubtfully, "but if you wish it—"

"I do, dear; it will be best, I'm sure," I said, kissing her. The result of the conference between mother and son was that Donald prepared for college at once, and early in the fall was admitted.

I felt like a boy after his departure. To have Constance to myself—to have my home freed from the only shadow it held made me wildly happy. I tried to control myself, so that Constance might not suspect the reason; but, of course, any woman not blind, deaf and dumb could perceive the change in me. I know it pained her, but she said nothing. She was always the same loving, thoughtful wife, the same interesting, intelligent companion; if possible, I loved her more as time went on. Donald spent his short vacations with his father's relatives, but his summers were passed with us.

As Donald grew older Constance's eyes would follow him in loving pride. He was certainly a fine specimen of manhood. To me he was always quiet and courteous, yet we never came any nearer to each other than at first. I gave him handsome presents on certain holidays and anniversaries, for which Donald thanked me cordially; yet I knew that he would have been better pleased if I had let them—and him—alone. He was far too clever not to know that they served as a panacea to a guilty conscience.

So the years, which have a way of slipping by so swiftly and silently, went on with no unusual excitement, and with a quiet happiness which is also unusual, I think. Comfort expressed the state of our lives—Constance's and mine. While far from being a passive, indolent character Constance never stirred me up unpleasantly; she gave her opinion frankly, but with no temper. Her life, though uneventful, was full of interests not confined within our home. She could talk with me on any subject, but while I only skimmed the surface of things she generally startled me with her original, fresh ideas on different themes. She was keenly interested in other people, and while superior to most of those about her she never seemed so. She had a few warm friends whom she dearly loved.

She was one of those rare women who could keep house easily, without being either a poor or careless housekeeper. She had a happy knack of managing servants, who generally seemed to adore her. She was indulgent, yet knew where to draw the line.

One day I was surprised to find in my mail at the store a letter addressed to me in Donald's handwriting. While the boy wrote regularly to his mother he rarely communicated with me, and when he did so he only wrote a few lines.

I opened the letter with some surprise and curiosity, and read:

"May—18—
"DEAR MR. HASSAN: I'm in trouble. Won't you come to me! Enclosed please find check for traveling expenses. Please don't tell mother where you are going, as I don't want her worried. Sincerely yours,
"DONALD M. STARR."

"Well, this must be serious! What scrape has he tumbled into now?" I thought impatiently. "He need not be afraid of my telling his mother. Confound the boy, he couldn't have chosen a more inconvenient time for me than now."

I made the best possible arrangements at the store for a short absence, and hurried home. I pleaded business to Constance, but it was my first concealment from her, and though many might think it foolish it troubled me.

When I reached C— I asked for Donald, and was directed to his rooms at a pretty cottage near the college buildings. A tired voice answered my knock with "Come," and I entered. Donald sat by the window, book in hand, but as soon as he saw me he came forward at once.

"You want help?" I said, as we sat down, and I saw his pale, anxious face, so different from the care-free one familiar to me. "Now tell me all about it," and I inwardly braced myself to hear the worst.

"Thank you, sir," said the young fellow warmly. "You are very kind; I shan't apologize for troubling you, and shall take as little time as possible in telling you of my—my misfortune. But first you must pledge me your word of honor that you will repeat nothing that I confide to you without my permission."

"I don't know whether I can do that," I said hesitatingly.

"Then, sir, I cannot say a word," said the boy. (How like the lad's expression was to his mother's.) I promised, and with downcast eyes Donald went on:

"You know, sir, that it is against the rules of the college for any of the students to enter a saloon. Lately a small and most disreputable one has been started in the town just below here. The boys were most emphatically warned that one visit there meant dismissal, or they would be expelled. A few nights since, several of the students—more in a spirit of lawlessness than a desire for drink—ran off to this place. In spite of all their caution some hint of it leaked out at the last moment, and two professors went in pursuit. The boys were warned in time and escaped, but as luck would have it one of them dropped one of my handkerchiefs with my name written in mother's plain handwriting in one corner. I had lent it to him one day at some entertainment where his was forgotten. He was not a friend of mine, and I see him but seldom as he is a sophomore; yet while those three boon companions go scot free I am the one of whom they have proof of guilt."

"It seems too silly and commonplace—the whole thing—and yet it has brought me into a world of trouble. I have been up before the faculty, and am threatened with being expelled. As you know, I'm a senior, and if this disgrace falls upon me I shall not be allowed to graduate. Even that is not the worst, but it is of mother I think. Such a thing would break her heart. It seems to me that I could not bear that." Donald broke off suddenly and began pacing the floor.

"But what do you mean? Of course the student who dropped your handkerchief will not let you suffer for it!" I asked in astonishment.

"Well, he will, and does," said Donald.

"But mercy on us, boy, I shall go and expose him—I shan't let you suffer," I burst forth.

"But your promise," said Donald quietly.

"You're crazy, Donald, to do such a foolish, Quixotic thing as this," I said impatiently. "Are you so fond of this mean, contemptible fellow that you wish to shield him, or is it some crazy idea of honor you have?"

"Neither," the young fellow answered, looking straight into my eyes (strange that brown eyes could look so like gray ones). "I am so anxious to graduate with honors, yet I cannot—must not—expose this fellow, because—I love his sister."

"Oh!" I stopped in time to keep from adding "nonsense!"

"Yes," I love his sister," Donald repeated earnestly. "I have written to mother about her. It would kill her if there were serious trouble for her brother. It isn't as if they were not so alone in the world, either, but they are orphans, and the sister, who is the elder, has been like a mother to him. She bears him on her heart all the time, sir. I could hardly put it before you just as it is, for she has denied herself and borne so much for her brother. And now, before he is half through his college course, to have disgrace come upon him—and her, it

would be too cruel. I am a man—it is best for me to stand it instead of a loving, helpless girl. If there is no alternative I must go. But I don't think that all is lost yet." Donald gave a singularly bright smile. "I knew that you were such an old friend of Professor Hicks, and I wondered—for the first time Donald hesitated.

"Go on," I said. "What can I do?"

"I know you think me foolish, and I am not sure that you would be willing, but I wondered if you would go to Professor Hicks and tell him solemnly that you were satisfied that I was perfectly innocent, but that the circumstances were such that I felt bound to be silent."

"Certainly I am willing," I replied, "but you know that Professor Hicks is against several, and he may think me partial."

"Oh, but you could tell him that you've never cared for me," Donald broke in impulsively, then stopped, looking annoyed.

"Go on," I said once more.

"Well, you know, sir, you never have liked me," said Donald as if he apologized, "though I cannot complain of your treatment of me, and I felt that if you would say this to Professor Hicks that your statement would have more weight than if, for instance, you—you—were my father or were fond of me."

"You seem to take it for granted that I believe you," I said.

"Yes, sir. You are a just man on the whole, and I think you know me well enough to be certain that whatever my faults I would not lie—again his manner so like his mother's. I looked at him curiously—I was beginning to think I had been mistaken in this tall, quiet, young man, and no man likes to own himself as fallible as other poor mortals."

"I will see the Professor at once," I said "and may I congratulate you on your engagement with the fair unknown?"

"We are not engaged," said Donald simply. "Mother and I both decided that I was too young, and I felt that I must have something assured. I could not bind a girl—and especially one who has had enough uncertainties in her life—to a possible long waiting for a student not yet out of college. She must know I love her—I could not help that, sir—and I hope—at least I fancy that she does not dislike me."

"As I could not keep my face perfectly sober I smiled outright, and then hurried off on my mission."

My old friend seemed unaffectedly glad to see me, and after we had talked over old times I introduced the subject uppermost in my thoughts. I told him the little I could, adding my unswerving belief—nay, knowledge—of Donald's innocence.

"It has astonished us all," said the Professor with a troubled air. "Donald's record has been so fine that we were amazed over this proof of his guilt. Of course I can imagine circumstances where it could be possible that Donald might be perfectly blameless, yet I cannot think that there is any student here who would permit such a thing." He looked keenly at me, I but flattered myself that my face was non-committal.

"The question that interests me is whether Donald is to be allowed to stay to graduate," I said. "If he isn't it will kill his mother, as well as blight the boy's prospects."

"I have always admired the boy, Chris. He seemed so manly good, not prudly good," Professor Hicks went on in the old earnest way I so well remembered, "and you know how I always detested prigs. You say you are sure of the boy's innocence—so am I; but I surely didn't understand you to say that Donald had never been a particular favorite of yours—why, man, he's one in a thousand."

I must say I felt quite uncomfortable under the scrutiny of those keen eyes of the learned Professor—I knew how miscreant students must hate to sit still under such a glance. It seemed not only to look about and around you, but through and into the deepest recesses of your being.

"Well, a man can be mistaken, can't he?" I blurted out like a boy. "One can't have the wisdom and insight of an ancient philosopher." An inscrutable look came into my old friend's eyes, but he said nothing.

When I took my leave he grasped my hand cordially. "I shall do what I can for your son, you may be sure," he said, "and shall write you the result."

"No, telegraph," I urged to my own surprise. Again that queer look came into the Professor's eyes as he replied: "Very well, I shall do so."

I hurried back to Donald and told him of my interview. He thanked me most cordially.

"I feel that I must leave to-day, unless by staying I can do you good," I said.

"You have done everything possible—I must now await the result, and I always have hope." Donald smiled as he said this, but his eyes belied his words. They were not only tired, but had a haggard look I had never seen there before.

"Donald," I said, grasping his hand, "let us be friends—no, more than friends. I own that I have been foolishly prejudiced against you, but that is past—"

He would not let me go on: "It was a prejudice on both sides, I am afraid," he interrupted me in a frank manner, "but as you say, it is now a thing of the past. Certainly, as we both think so much of the same woman—here he gave a look half shy, half amused at me, "we have one thing in common."

As I was whirled away on the swift-going train my thoughts seemed to partake of the train's motion—they seemed quicker and keener than usual. They were principally with and about Donald. So many things—trifling they seemed at the time—returned to me, of the opportunities I had willfully lost, to win the boy's love and confidence—was it still too late? It certainly spoke well for him that he could trust me so entirely in this affair. Would those stupid, dreamy professors know enough to acquit him, with that unfortunate handkerchief as proof? Why one look into the lad's eyes would be enough to offset that small and silent witness. As Professor Hicks had said, he was a boy to be proud of; he had spoken of him as "your son," and the phrase haunted me. Why hadn't the bees my son as well as Constance's!

When I met my wife after these few days' separation I looked at her with new eyes. For the first time I seemed to partly realize her feelings as a mother.

At the dinner-table I incidentally praised Donald's capacity as a student. The sudden lighting of her eyes, the quick look of surprise touched me. What a jealous beast I had been!

How anxiously I awaited that telegram! Constance started me one day by saying: "Do you know, Christian, I've felt for days that Donald was in some trouble—aren't mothers foolish?"

"No, they are far too good for us, but we need them more than they imagine," I answered with feeling.

"Christian," said my wife with a look of relief, "you are so different."

I knew what she meant. With her quick instincts she had felt that she could, for the first time, speak freely to me of Donald.

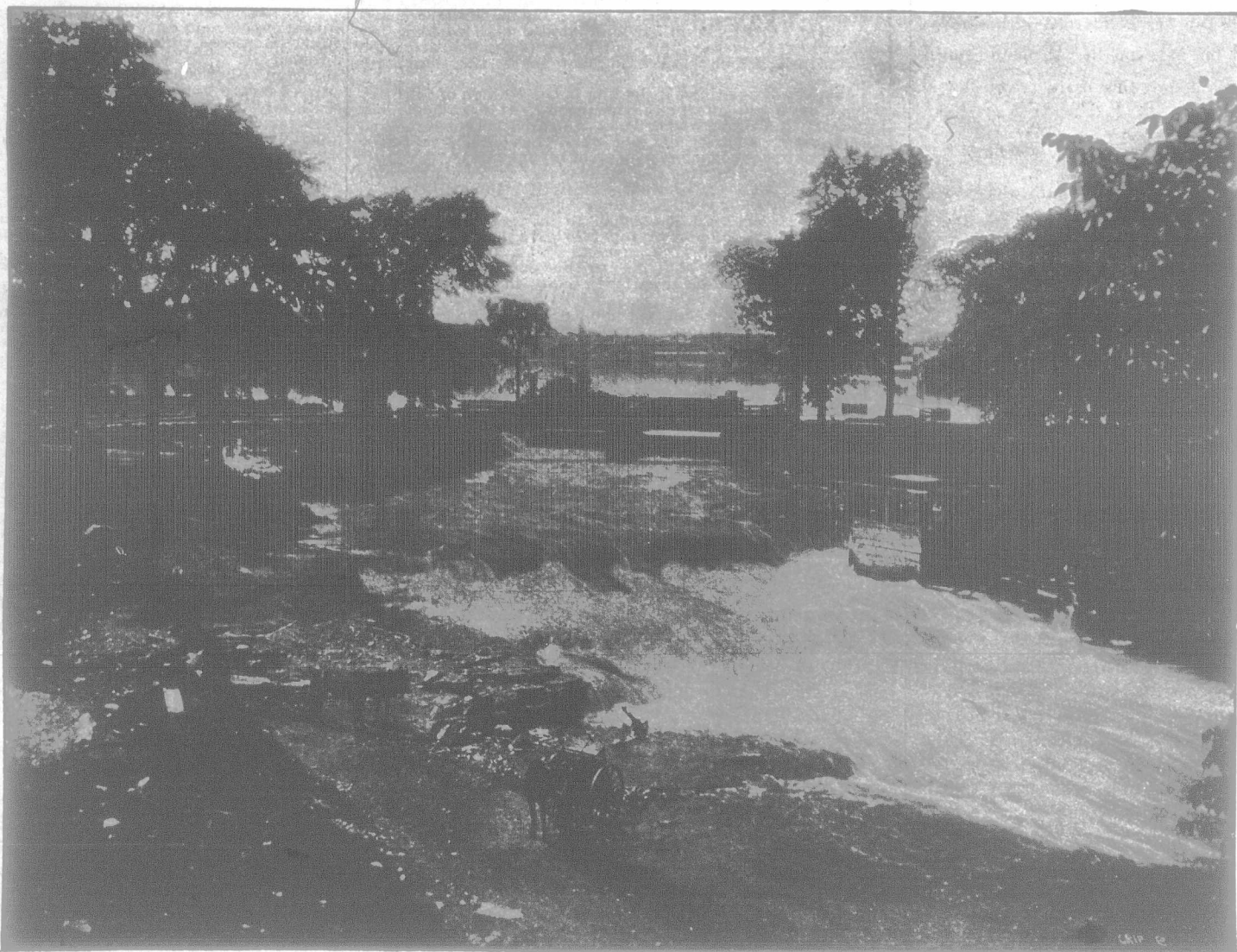
At last the telegram arrived. I tore it open in furious haste. It ran:

"All serene. Donald is to graduate. 'SAMUEL HICKS.' You seem very happy," said Constance. I longed to tell her all, but felt that Donald should be allowed to do that.

The lad graduated in June, and Constance and I went on to C—to witness his triumph. His oration was praised universally, and not a few declared that it excelled the valedictory. I thought there was no doubt about it. I was astonished at its originality and depth of thought.

I confess I was proud of the handsome, tall, young fellow who bore his honors so modestly, yet with a self-possession I almost envied. And in the evening, at the promenade concert, Donald brought up a young girl to whom he introduced us—Miss Henschel. I knew this must be the fair unknown. I had only thought of her in a careless way—a passing boyish fancy—a college flirtation—but after that meeting my opinion was shaken.

Marie Henschel impressed me as a girl of no ordinary calibre. I had seen more beautiful girls—never but one with the peculiar attractiveness she possessed. That look in her eyes showed character; it could not be assumed at pleasure. It came from experience in sorrow as well as a habit of thought. Yet she was not a grave young woman. Her smile was sunny, and her manner as bright as it was winning. I could see that Constance felt drawn toward her at once. Yet, mother-like, she criticised while entertaining her most charmingly. It was



A SCENE AT SMITH'S FALLS.

almost unconscious yet none the less keen. I felt—and wondered that I should feel it—that she must look upon this lovely girl with a certain awe as the arbiter of fate to the one she loved so dearly. For better or for worse, this was probably the life-companion of her boy. It may seem strange that as there was no formal betrothal we should have felt as if this were a settled fact, but we did.

I had said as I watched Marie Henschel: "If that young scamp doesn't prove faithful to that girl he don't deserve his salt." But even as the thought passed through my mind I knew that Donald would prove as constant as the truest knight in old ballad or story.

After the commencement was over we three went off for a stay at the seashore.

It was there we talked of his future. I had thought of it often lately, and wondered which of the professions he would select. To my surprise, when I asked him, he said: "I do not want a profession. Will you answer a question with perfect freedom?" I assented. "Would you care to take a partner in your business—one with capital?" he asked.

"I've always had a prejudice against partners—but you don't mean that you are the partner?" I added as sudden light visited my obtuse brain.

"Yes, I do," Donald said smiling, "but you must refuse if you have the slightest hesitation about it. I shall go into mercantile life of some sort, and I should like the benefit of your experience, if you could put up with my lack of it. Don't answer now, sir; I can wait."

Well, the result was that in the fall there was a new firm, a fine new building put up, with a new sign: Hasson & Starr. Donald's money was very acceptable to me in extending my business, and he seemed to think my established reputation and experience helped him, so it was a mutual satisfaction.

As soon as the arrangements were fairly settled up there among the mountains, Donald was the accepted fiance of Marie Henschel. They were married soon after.

It was at the pretty, quiet wedding at Marie's aunt's that Donald surprised me more than I thought possible in a man of my years. As Constance and I came near to kiss the bride, so sweet and tremulous in her happiness, Donald said quickly: "Oh, father, you will love her, won't you?" It was the first but not the last time Donald called me by that new title. I should never have dared ask for it, but the voluntary giving of it was more gratifying to me than I can ever express.

MINNIE MAY'S DEPARTMENT.

A Scene at Smith's Falls.

The picturesque and bustling little town of Smith's Falls is fast becoming a favorite summer resort of the idler, the camper-out and the sight-seer. Situated on the junction of the Rideau and Catarqui river, and in the heart of the oldest settled land in Ontario, the water privileges have tempted and nourished many a flourishing industry. Frost and Wood's large agricultural works do an immense business and one of the largest flouring mills in Ontario, a chemical works, and several foundries are a few of the many successful enterprises. It is situated in the county of Lanark, and within easy access by rail or boat. The drives about the town are remarkable for their beauty, the roads are some of the best, the people hospitable, and a general feeling of success and content pervades this pretty spot.

Recipes.

RAW CATSUP.

Peel and slice one peck of ripe tomatoes, strew in a cup of salt in alternate layers, let stand over night; then drain off all the juice. Chop fine and add a tablespoon of pepper, cloves and allspice, and a little cayenne pepper, one pound of brown sugar and one quart of good vinegar. Bottle for use.

CHILI SAUCE.

Twenty-four large, ripe tomatoes, 6 green

peppers, 4 large onions, 3 tablespoons salt, 8 tablespoons brown sugar, 6 teacups vinegar. Chop peppers and onions very small, peel the tomatoes and cut very fine, put all in a kettle and boil gently one hour.

SEED CAKE.

Two cups granulated sugar, ½ cup of butter, 3 eggs, 1 cup of milk or water, 3 cups of flour, 3 teaspoons of baking powder, ½ cup of caraway seeds or peels: beat eggs separately.

WHITE FRUIT CAKE.

One half pound each of flour, butter, white sugar, and blanched almonds, 1 lb. citron peel, ¾ cup of coconut, whites of 8 eggs, 1 teaspoonful of baking powder, lemon or white rose flavoring.

CREAM SPONGE CAKE.

One cup of white sugar, 1 cup of flour, 2 teaspoonfuls of baking powder mixed into the flour. Beat two eggs in a cup and fill up

with thick, sweet cream. Flavor to taste.

PICKLED APPLES.

Ten pounds of fruit, 4 pounds of sugar, 1 quart of vinegar, a few cloves and cinnamon. Boil the apples in the syrup until soft.

Kitty Knew About Sheep.

Seven sheep were standing

By the pasture wall.

"Tell me," said the teacher

To her scholars small,

"One poor sheep was frightened,

Jumped, and ran away.

One from seven—how many

Woolly sheep would stay?"

Up went Kitty's fingers—

A farmer's daughter she,

Not so bright at figures

As she ought to be.

"Please, ma'am"—"Well, then, Kitty,

Tell us, if you know."

"Please, if one jumped over,

All the rest would go."

—Exchange

The longest single span of wire in the world is used for a telegraph wire, and is stretched over the river Kistnah, between Begorah Tectanagram in India. It is over six thousand feet long, and is stretched from the top of one mountain to another.

The growth of ivy on the walls of houses renders the walls entirely free from damp, the ivy extracting every particle of moisture from wood, brick or stone for its own sustenance by means of its tiny roots, which work their way even into the hardest stone. The overlapping leaves of the ivy conduct water falling upon them from point to point until it reaches the ground without allowing the walls to receive any moisture whatever.

UNCLE TOM'S DEPARTMENT.

MY DEAR NEPHEWS AND NIECES:—

June's roses have faded, and her long days are gone for another year. July has followed day by day, with hot suns, dewy mornings, thunder showers, and fields ready to be harvested.

How well I remember the old threshing day in my barefoot boyhood's days. Five teams of horses hitched to their respective arms, running from a centre, plodded their weary way round and round.

make your lives so as to accomplish more each day—more and better than those now passing away. Learn this, that every fault is a weakness, every step from the path of truth, be it but a hair's breadth wide, is a weakness, that every step from the right path makes you less able for the work of life.

Prize for Selected Poetry.

MORLEY SMITHSON, GREYSTOCK, ONT.

William Wordsworth was born in 1770, and holds a high position as a poet. His language is remarkably simple and commonplace. He was an enthusiastic lover of nature. His poems are marked by simplicity, naturalness, and tender pathos.

To a Skylark.

Ethereal minstrel! pilgrim of the sky! Dost thou despise the earth where cares abound? Or, while the wings aspire, are heart and eye Both with thy nest upon the dewy ground?

Leave to the nightingale her shady wood, A privacy of glorious light is thine; Whence thou dost pour upon the world a flood Of harmony, with instinct more divine.

Named with a thousand names, I am but one; Mother of men that are, or were of old, Of all that creep or fly below the sun, The eagle and the blind-worm in the mould.

I am the seed that sprouts, the leaf that falls, The summer's bloom, the winter's blighting breath; I am the first spring bird that cries and calls; I am the pangs of birth, the peace of death.

Mine is the hand that guides yon speeding spheres, And those small notes that glimmer in the light; I write on rocks the records of the years, Whose feet tread down the cities in their flight.

I am the smallest part, the mighty whole, I sing with streams that sing in quiet lands; I rave with winds on seas that reel and roll, I loose or leash the tempests with my hands.

I wave my torch, and lo! the lightning's flare; I breathe, and hark! the forests sway and rock; I speak; the thunder-lions in their lair Roar diapasons with the cyclone's shock.

I am rude, ruddy health, and wan disease; Dives and Lazarus are one with me; I am the laws that smite, the thief that flees, Utmost and undermost of sky and sea.

Strength of the strong, and weakness of the weak, I dare the soldier on to deeds of fame; I urge the dastard's flight through battle reek; I am the death, the splendor, and the shame.

Child of my breast, I neither love nor hate; With equal bliss and blight I dower thee; I hold and hide the secret of thy fate; I slay or save, I bind or set thee free.

I ask no prayer; not mine the need of praise, I blindly grant the gift, or wield the rod, I am the slave of One unseen, who says, "Let it be so!"—ye mortals call him God.

Womanhood.

All skilful hands in other days, The poets, priests, and premiers great, Employed their craft in divers ways To build for her a seat of state,

Ivory-white And jewel bright: And all the world declared 'twas good— A throne was meet for womanhood.

But queens have left their thrones ere now— Have doffed their crowns and said or proved That royalty itself might bow, And through the populace have moved,

To serve and pray And go their way; And none have hindered, thought they could— Is this the case with womanhood?

It seemed where'er I chose to roam I saw to-day in every place— The busy mart, and quiet home— A being dowered with regal grace,

At work with men, Brain, hand and pen: And this, somehow, I understood, Was throne-despising womanhood.

Alfred Tennyson.

Alfred Tennyson was born in 1810, and has been by common consent the leading poet of the Victorian age. He has shown entire devotion to the poetic art, and, at the same time, has been a close observer of the life and pursuits of his fellow-men.

Ring Out, Wild Bells.

Ring out, wild bells, to the wild sky, The flying cloud, the frosty light: The year is dying in the night; Ring out, wild bells, and let him die.

Ring out the old, ring in the new, Ring, happy bells, across the snow: The year is going, let him go; Ring out the false, ring in the true.

Ring out the grief that saps the mind, For those that here we see no more; Ring out the feud of rich and poor, Ring in redress to all mankind.

Ring out a slowly dying cause, And ancient forms of party strife; Ring in the nobler modes of life, With sweeter manners, purer laws.

Ring out the want, the care, the sin, The faithless coldness of the times; Ring out, ring out my mournful rhymes, But ring the fuller minstrel in.

Ring out false pride in place and blood, The civic slander and the spite; Ring in the love of truth and right, Ring in the common love of good.

Ring out old shapes of foul disease, Ring out the narrowing lust of gold; Ring out the thousand wars of old, Ring in the thousand years of peace.

Ring in the valiant man and free, The larger heart, the kindler hand; Ring out the darkness of the land, Ring in the Christ that is to be.

Puzzles.

1—SQUARE WORD.

My first "a case for instruments," as you will quickly see; My second "a kind of spider," I am informed, may be; My third is known as "wideness," and if you take a look You'll find my fourth is merely "recording in a book;" My fifth "exists in ether, a hypothetical base"; If still incredulous, look it up, you'll find it is the case.

ADA ARMAND.

2—CHARADE.

Oh, puzzlers great, you are doing well; Each at your post I see; But where am I? I have just come on; Have you LAST no post for me?

I am late, I know, my captain, To be added to the crew; Yet I promise that I will do my best FIRST the good "Advocate" canoe.

My reward will not be so great As if I had started sooner, I see; But I ENTIRE I must obey all orders That are given by our captain, Uncle T.

THOS. W. BANKS.

3—NUMERICAL.

Young 7, 6, 5 ate a big slice of my 3, 8, 1, 4, 5 so nice; then he drank of my whole quite a big drop, and finished by sucking one of my 1, 2, 3, 4, 5's before he stopped.

H. REEVE.

4—SQUARE WORD.

My first is "a harbor" where vessels and ships May go and be safe from the storm. My second is left "by itself"—undisturbed— Even though the weather be warm.

FAIR BROTHER.

5—ENIGMA.

I have no tongue and yet I talk, Although my words are few; I have no feet, I cannot walk, Yet run I can and do. In figures I am posted well, I'll point them out, their names I'll tell. My face you often on it gaze; My hands I often upwards raise; In truth I never lifted one, But what I told you when 'twas done.

ADA SMITHSON.

6—CHARADE.

They made me a "middy" COMPLETE my consent, But now FIRST my office I'll be quite content; I'll try to do my duty well, But how I'll succeed I cannot tell. They'll soon be putting me LAST, perhaps, There are so many clever chaps Who'd fill the office far better than I, If they only had the pluck to try.

I. IRVINE DEVITT.

7—CONUNDRUM (Not Original).

Two women were standing at a door. As two men approached, they said: "Here come our fathers, our children's fathers, our children's grandfathers, and our husbands."

A. BORROWMAN.

8—DECAPITATION.

We are a band of puzzlers, With a leader good and true, Trying in our noblest way What great work we can do.

We love our puzzling TOTAL, And try, whate'er we do, To please our dear old Uncle Tom, And to him always be true.

Persevere and succeed, Our motto we prize so dear, For it FIRST proved its value In this, our puzzling sphere.

We'll welcome all new cousins, Though they hail from distant places, For all are welcome to compete In this great puzzle race.

GEO. W. BLYTH.

9—CHARADE.

I have a friend who, I am told, Is fond of playing tricks; He tried one just the other night, And 'most got in a fix.

Like me, my friend's a country lad, And rooms at nineteen-ten; He thought he'd play a little joke, And spring it on the men.

Of course, you know, 'twas not at home, This trick he tried to play; But at a city boarding house, Where we are wont to stay,

Into the secret he did let, ENTIRE friend and I; He then put on a cowboy's hat, And fixed up on the sly.

A false face then he did put on, And slipped out the back way; Unnoticed by the people who On the portico held sway.

He came around, passed by them all, Right in the house went he, A man dashed after him, and then The women yelled quite free.

A tramp! a burglar! catch the thief! What makes him act so queer? Send for a cop! a lady cried; He has no business here.

Inside the house the fun went on; The man caught him, I'm told. They had a tussel in the dark, And round and round they rolled.

He's got away, the slippery eel. Somebody strike a light! He's gone down cellar, hurry, quick! Alas! He's out of sight.

Out from their rooms the people came— 'Twas after ten you know— Some only partly dressed; ha, ha! Come out to see the show.

The search began, high up, low down. They scattered far and wide, And hunted long, but found him not, My friend had got outside.

He changed his clothes and his cravat, And round the corner he Came, and asked the innocent What might the tumult be.

Somehow the trick leaked out at last— Of course, jokes always will— It furnished gossip for a week; In fact, 'tis talked of still.

Some thought it was PRIME awful trick, While FINALS thought 'twas fun; One lady got completely mad, And now my story's done.

FAIR BROTHER.

Answers to August 1st Puzzles.

1—With-in. H. TOMER. 7—MOB. MOREL. CORNET. BENET. LET. 2—TOMER. H. MERIC. MERINO. RINGS. COST.

3—Stone, notes, tones. 4—Send-end. 9—(a) Policeman. 5—Petchora. 6—A nail. (b) Intemperate. 8—Peal, pale, plea, leap. (c) Pardonable.

Names of Those Who Have Sent Correct Answers to August 1st Puzzles.

Ada Smithson, Henry Reeve, Oliver Snider, Addison Snider, Josie Sheehan, George W. Blyth, Morley Smithson, Joshua Umbach, Ed. A. Fairbrother, Minnie Moore, George Garalde, A. R. Borrowman.

Poultry on the Farm.

BY MRS. IDA E. TILSON, WEST SALEM, WIS.

At a store where eggs are taken for goods, I have more than once seen a clerk sorting out and wiping off a lot which should have come in better shape. Tidy nests make clean eggs, and in market clean eggs are more attractive than soiled ones. If washing is necessary, let it be done at once and thoroughly. Hold an egg before a strong light, or examine with a microscope, and how porous its shell appears. The taint of outside dirt soon reaches the inside. Even clean eggs kept in a mouldy cellar or other unsuitable place absorb and taste of the same mustiness. Then, a dirty coating soon hardens, sticks like a leech, and leaves unsightly stains. Some of our grandmothers had an idea washed eggs do not keep as well, and, indeed, to smear a spot of dirt in a thin film all over a shell, so often done by merely wiping off, is no advantage, but a harm. Instead of spreading, diluting and rubbing in, the dirt requires removing. I prefer more cleaning of nests and less washing of eggs. Randolph, of Roanoke, once complained at a Richmond hotel that the eggs served were not fresh, and suggested they be purchased in another county, just across the James river, because the people over there were too poor to keep their eggs long. Since I wish to sell my eggs at their prime, I would not hold them over a month in cold or a week in warm weather. As a fact, I rarely have a chance to retain them even a week. However, an aunt, who formerly got her winter's supply of me, said by turning occasionally she kept them perfectly good for six weeks or so, in pans, on a shelf in her dry cellar. Had she but used an egg-case, she would have anticipated what has now come to be considered as probably the best method of preservation. If I were sending mine abroad, should, like many poulterers, write on each egg, as gathered, the date. Then the commission man could market seasonably, their history would be known, and the oldest might be used first. An egg having been subjected to such heat in biddy's interior does not beat up so stiffly nor cook as well till cooled, and epicures say is in its prime from one to three days old. If necessary to use those just laid, first immerse them in cold water awhile. Those kept in too warm a place and grown a little stale will be cooled, freshened and made less refractory, if a pinch of salt is put in the whites when beaten. As

eggs are broken for cooking, considerable white adheres to the shells, unless it is detached by the finger. Cooks who have measured say the amount of one egg may thus be wasted out of every dozen. A temperature of 60° is often recommended for stored eggs, but a few degrees above or below do no harm. Mine are put summers in a store-room which has an ice-box adjoining. According to several trials with a thermometer, the temperature of room runs from 65° to 75°. A valuable Houdan hen took to laying in our barn one cold February; though some of her eggs became quite chilled before gathered, I set them in March and received nine chicks. From my own experience, the effect of any cold above freezing is less dreaded than that of heat on flavor and vitality of eggs, and I have read that Canadian eggs average the largest and heaviest of all, quite defying competition from warmer countries. There are some disadvantages in living near a village and selling my product at the house. I must be constantly posted on prices, keep and make change, be often hindered, and, though usually appreciated, do occasionally meet one like a lad who asked me whether they would not come cheaper if he took ten dozens. I think I convinced him that to let any one person have so many guaranteed strictly fresh eggs would be a great favor on my part.

Of course, the reason why eggs are cheaper in summer is because that season is so favorable for laying, and more are sent to market, but their cheapness is no reason why summer eggs should be despised and considered unprofitable. Not only is their number increased, but the cost is lessened, so at a low price the profit equals that in winter. There is both a saving on the quantity of food and in the time required from the manager. Think how self-helpful our biddies are on their grassy runs, contrasted with their helpless condition imprisoned by snowbanks. Then we are heavily feeding grain to create animal heat; now we are lending our bushes and shade trees to keep them cool. Whenever we compare the cost of production with the price received, we shall find poultry yielding more in proportion to capital invested than any other branch of farming gives. There can be no over-production while the U. S. and England still import eggs, but I believe if people were only sure of buying good ones and always getting their money's worth, they would eat more eggs and ex-

tend our market. It is not generally enough to take what comes, we must go after something besides. Let us as poulterers study to make this a twelve-months-a-year business, each month yielding its profit and pleasure. Summer eggs have the advantage of very yellow yolks, which is often noticed in comparing preserved with winter's fresh-laid ones. Grass and green foods contain the coloring matter which passes into a hen's product the same as into a cow's butter. Let us be carefully curing and saving fine, succulent clover and lawn clippings, and on the lookout for a vegetable supply. If I have not repeated this two or three times before, it ought to have been, and those who make no plans for the future seldom bestow much attention on even the present.

Poultry Yard Notes.

From this time forward, as the growing stock is coming to maturity for the season of 1893, we should give them special attention. At no time can we do our growing chickens so much good as while they are progressing from the ages of two or three months to six or seven months old, through systematic care and judicious feeding. If they have a good roomy range in field or pasture, they will now obtain a great variety of insect provender among the grass and herbage adjacent to the runs and pens. If we are obliged to keep them penned up or confined to lesser space, then these things must be supplied to them as abundantly as possible artificially. They must have plenty of green food or they will not thrive satisfactorily. This can be furnished in the shape of sods thrown to them daily, or the lawn-trimmings may similarly be given them with advantage. Freshly cut grass, turnip-tops, surplus green corn, chopped turnips and onions, all are excellent in their way, and one or the other of these will be in season in spring, summer and autumn. A little cooked coarse meat, an occasional feed of chandler's scraps, etc., will each and all supply a needed want if the birds have no place to roam in. But the "green food" of some kind is a desideratum, be it observed. Without this we have never found in our experience that good chickens can be raised; and we therefore remind our readers at this season of the absolute importance of this provision.

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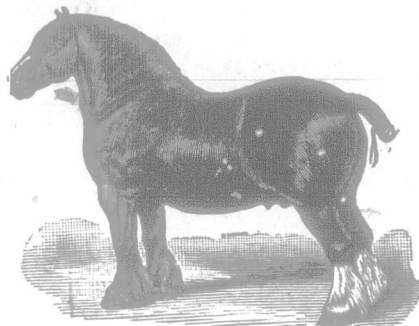
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Duke of Vachell 4th also offered at very low price.

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EMERSON, MAN.

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Also Yorkshire Pigs, B. B. Red Games and S. S. Hamburgs.
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Have now on hand a lot of different ages, bred from prize-winning stock. Write or call early and get your choice. 53-1-b-m

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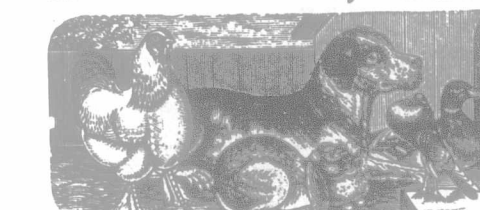
Holstein Cattle and Improved Large Yorkshire Swine. Now for sale a choice lot of boars and sows farrowed last September, also sows to farrow in spring. Write for particulars. 27-y-m

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Under the authority of Sec. 18, 19, 20, 22, and 26 of the Veterinary Association Act, 1890 (53 Vic., Chap. 60), the following persons only are entitled to practice as Veterinary Surgeons in the Province of Manitoba, or to collect fees for services rendered as such:

- Alton, W. W. Wawanessa. Dunbar, W. A. Winnipeg. Dann, Joseph. Deloraine. Fisher, John Frederick. Brandon. Fisher, Peter M. Melita. Hinman, Willet. Winnipeg. Hopkins, Arthur George. Hartney. Henderson, W. S. Carberry. Irwin, John James. Stonewall. Lipsett, J. H. Holland. Little, Charles. Winnipeg. Little, William. Boissevain. Little, Michael. Pilot Mound. Livingston, Archibald M. Melita. McFadden, D. H. Emerson. McMillan, Adam. Oak Lake. McNaught, David. Rapid City. Morrison, Wm. McLeod. Glenboro. Murray, George P. Morden. McLoughrey, R. A. Elkhorn. Poole, John Wesley. Carman. Rutherford, John Gunion. Portage la Prairie. Shoults, Wm. A. Gladstone. Smith, Henry D. Winnipeg. Spiers, John. Portage la Prairie. Taylor, William Ralph. Carberry. Thompson, S. J. Brandon. Torrance, Frederick. Boissevain. Walker, J. St. Clair. Boissevain. Young, M. Manitou. The practice of the veterinary profession in Manitoba by any other person is in direct contravention of the statute and renders him liable to prosecution. 47-1-f-m H. D. SMITH, REGISTRAR.

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keep the Felch pedigreed strain Light Brahmas; famous for distinct markings, uniform type, true Brahma outline, and great egg-producing qualities. In keeping with their world-wide reputation they were prize-winners at Brandon Summer Fair and Winnipeg Industrial, 1892. Eggs per setting, \$3.00; two settings, \$5.00. Orders booked as received. Correspond with J. C. HARRISON, Box 43 Brandon, Man. 37-1-y-m

FOR SALE CHEAP.—Trio Single Comb Brown Leghorns, winners of second prize at Winnipeg Industrial Exhibition, 1893. Write me for price.—R. J. MITCHELL, Polson Ave., Winnipeg. 52-b-m

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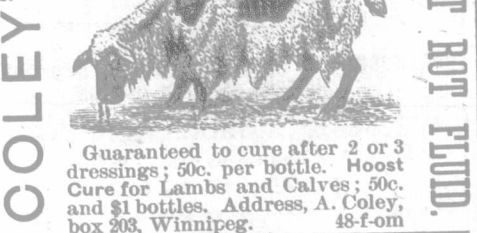
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Victoria Hall, Winnipeg, Nov. 17, 1891. We, the undersigned, saw Mr. McCrossan's small Washing Machine working, and testify that it does grand, good work, making the clothes ready in ten minutes for boiling, and with the second suds so white and clean that they did not require boiling, and a small child can work it, and we will recommend it to our friends. The washing consisted of white and colored shirts, collars and cuffs, aprons, night dresses, tablecloths, table napkins, handkerchiefs, waists, towels, etc.

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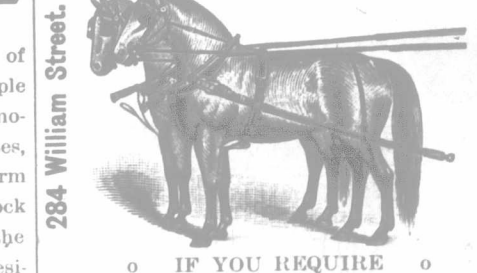
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Table with columns for NORTH BOUND, SOUTH BOUND, STATIONS, and times. Includes stations like Winnipeg, Portage Junction, St. Charles, etc.

MORRIS-BRANDON BRANCH.

Table with columns for EAST BOUND, WEST BOUND, STATIONS, and times. Includes stations like Winnipeg, Morris, Myrtle, etc.

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Bull, three years or over.—Third premium, W. B. Cockburn, Aberfoyle, Ont., British Chief; 9th, W. B. Cockburn, Greenhouse Chief; 10th, W. C. Edwards, Rockland, Ont., Dr. Lenton; 12th, P. Birdall & Son, Birdall, Ont., Waverly. Bull, two years and under three.—Fifth premium, W. C. Edwards, Rockland, Ont., Knight of St. John; 6th, W. G. Saunders, St. Thomas, Ont., Elgin Chief; 11th, J. & W. Russell, Richmond Hill, Ont., Prince Royal. Bull, one year old and under two.—First premium, J. & W. Russell, Lord Stanley; 3rd, R. & S. Nicholson, Sylvan, Ont., Velasco; 4th, R. & S. Nicholson, Norseman. Bull, under one year old.—Second premium, W. B. Cockburn, Indian Warrior; 6th, J. & W. Russell, Prince Kummell; 8th, W. C. Edwards, Lyndhurst II; 9th, John Morgan & Son, Kerwood, Ont., Goldfinder; 12th, W. G. Saunders, Daisy Prince; 13th, W. B. Cockburn, Lord Saunders. Cow, three years and over.—Ninth premium, W. B. Cockburn, Village Lilly; 13th, W. C. Edwards, Besse of Rockland; 17th, J. & W. Russell, Queen Mary; 18th, W. C. Edwards, Belinda; 22nd, W. B. Cockburn, Wimple of Hatton. Heifer, two years old and under three.—Second premium, J. & W. Russell, Centennial Isabella; 9th, W. B. Cockburn, Nonpareil Prize; 12th, W. C. Edwards, Rosewater. Heifer, one and under two years.—Fifth premium, R. & S. Nicholson, 31st Maid of Sylvan; 7th, J. & W. Russell, Centennial Isabella; 8th, W. B. Cockburn, Wimple Birdie; 10th, J. Morgan & Son, Sussex Maid; 11th, R. & S. Nicholson, Lenore of Sylvan; 13th, same owners, Lenore of Sylvan 7th. Four animals, either sex, under four, the get of one sire.—First premium, J. & W. Russell, Lord Stanley, Ruby Princess, Nonpareil 5th, Centennial Isabella 30th, 3rd Lenora of Sylvan; 5th, R. & S. Nicholson, Nonpareil Chief 31st, Maid Sylvan, 5th Lenora of Sylvan; 8th, W. B. Cockburn, Indian Chief, Greenhouse Chief, British Chief, Nonpareil Chief, Indian Warrior. Two animals, either sex, produce of one cow.—Third premium, same owners, Roan Princess, Prince Royal, Queen Mary; 9th, W. B. Cockburn, Daisy Star, Greenhouse Chief, British Chief. Heifer, consisting of one bull two years old or over, one cow, three years old or over; one heifer, two years old and under three; one heifer, one year old and under two; one heifer, under one year old.—Seventh premium, J. W. Russell; 9th, W. C. Edwards; 10th, W. C. Cockburn. Young herd, consisting of one bull and four heifers under two years, bred by exhibitor.—First premium, J. & W. Russell; 5th, R. & S. Nicholson.

Aberdeen-Angus.

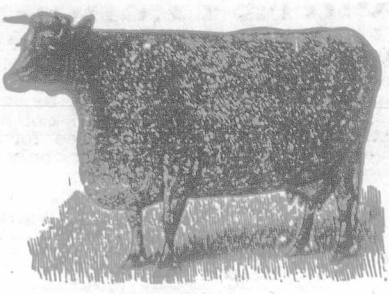
Bull, three years or over.—Second premium, Robert Craik, Montreal, Emlyn. Bull, one year and under two.—Third premium, Robt. Craik, Royal Blackbird; 5th, same owner, Emman. Bull, under one year.—Seventh premium, same owner, Pride Imperial. Cow, three years old or over.—Seventh premium, same owner, Pride of Guisachan 5th; 8th, same owner, Fairy H. of East View. Heifer, two and under three.—Seventh premium, same owner, Pride of the Ermine; 8th, same owner, Ericacle. Heifer, one year and under two.—Tenth premium, same owner, Pride of Emlyn; 11th, same owner, Emlyn's Favorite. Heifer, one bull, two years old and over; one cow, three or over; one heifer, two and under three; one heifer, one and under two, and one heifer under one year.—Fifth premium, same owner, herd by Emlyn. Galloways. Bull, three years old or over.—Second premium, Wm. Keough, Owen Sound, Ont., Clarehouse; 7th, same owner, Grey of Clarehouse. Bull, one year and under two.—Second premium, same owner, Glencairn 2nd; 4th, same owner, Ottawa. Heifer, two years and under three.—Fourth premium, same owner, Countess of Glencairn 4th; 7th, same owner, Rachel 3rd. Heifer, one year and under two.—Fourth premium, same owner, Countess Glencairn 5th. Heifer, under one year.—Fifth premium, same owner, Mary 8th. Herefords. Bull, three years or over.—Sixth premium, F. A. Fleming, W. Ston, Ont., Commodore. Bull, two and under three.—Sixth premium, same owner, Baron Eowly. Bull, under one year.—Fifth premium, same owner, Barnum. Cow, four year or over.—Fourth premium, H. D. Smith, Compton, Que., Lady Tushingham 3rd; 14th, F. A. Fleming, Barbara; 15th, same owner, Lily Welton; 18th, W. D. Smith, Amy 3rd. Heifer, two and under three.—Eleventh premium, H. D. Smith, Spot 3rd; 13th, F. A. Fleming, Playful 2nd; 15th, same owner, Lady Fenn 5th. Heifer, one and under two.—Fourteenth premium, same owner, Lotus Beauty; 16th, H. D. Smith, Josephine 2nd; 20th, H. D. Smith, Cherry 25th. Heifer, under one year.—Fourth premium, F. A. Fleming, Lady Fenn 2nd. Heifer, consisting of one bull, two years old or over, and one cow of either age.—Eighth premium, F. A. Fleming, herd headed by Commodore. Four animals of either sex, under four years old, the get of one sire.—Eighth premium, same owner, Wilton Hillhurst. Two animals of either sex, the produce of one cow.—Third premium, same owner, Play; 6th, H. D. Smith, Sylvia.

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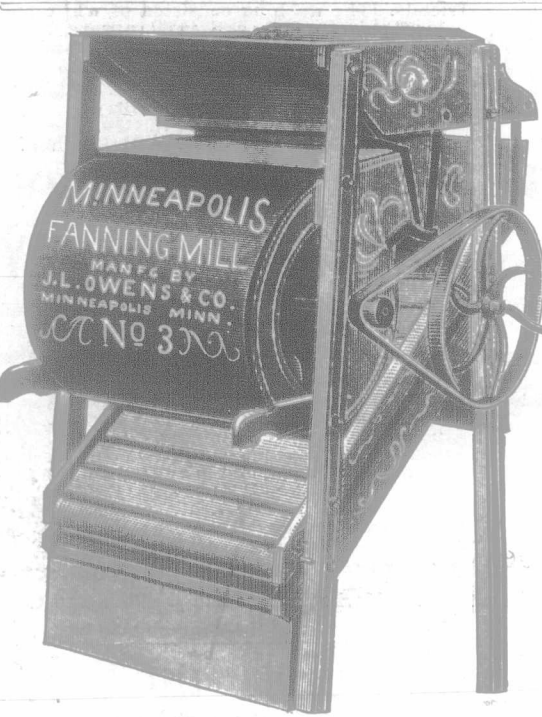
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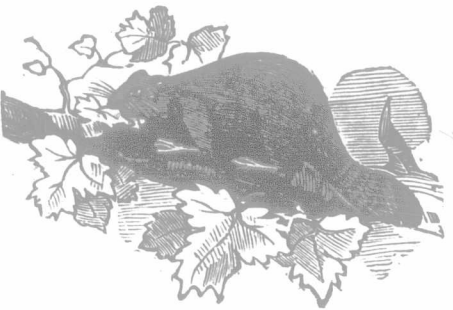
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S. 131 and N. 1 of N. 130	12	3 E
N. W. 16 and S. W. 17	2	6 W
N. 17	2	6 W
N. W. 117 and S. W. 120	2	7 W
N. E. 30	4	6 W
N. W. 1 and part E. 130	13	2 W
N. E. 14	4	9 W
N. E. 27	4	9 W
N. E. 14	14	15 W
N. W. 124	13	15 W
N. E. 11	13	19 W
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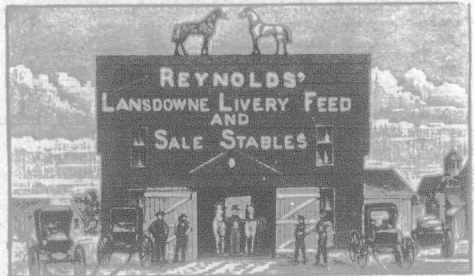


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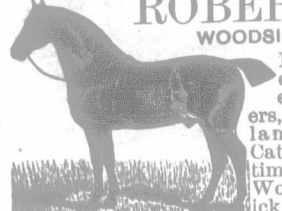
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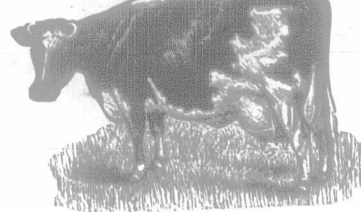
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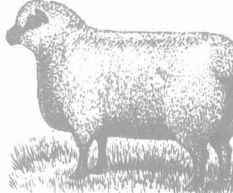
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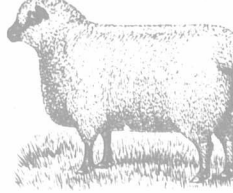
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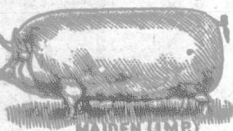
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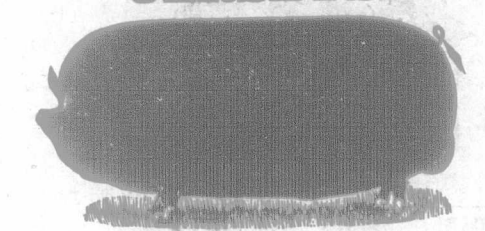
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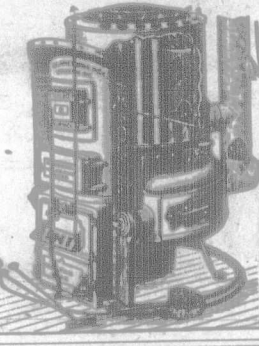
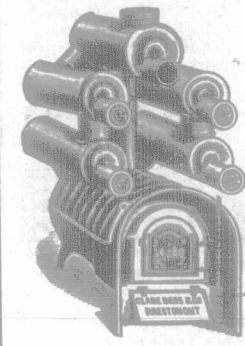
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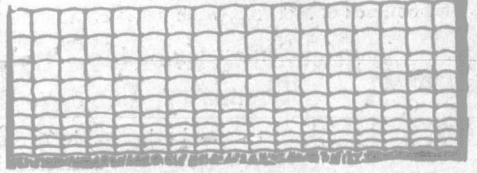
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We desire to inform the farmers and public generally that we are prepared to supply the material or erect this fence throughout the Dominion of Canada.

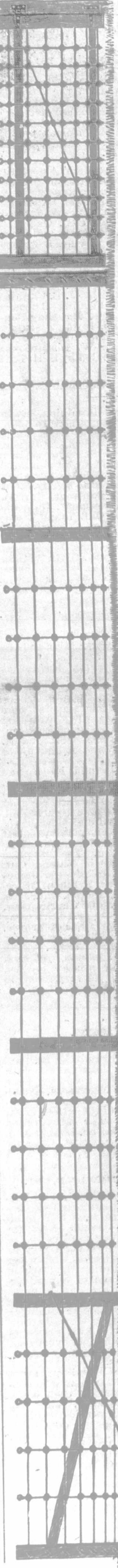
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STOCK GOSSIP.

In writing to advertisers please mention the Farmer's Advocate.

Mr. Mortimer Levering writes us: "The annual meeting of the American Shropshire Registry Association will be held Monday, October 2nd, 10 o'clock a.m., in the Assembly Hall, Live Stock Building, World's Fair Grounds, Chicago, Ill. The annual meeting of the American Shetland Pony Club will be held Saturday, October 14th, 7 o'clock p.m., in Assembly Hall, Live Stock Building, World's Fair Grounds, Chicago, Ill.

The National Swine Breeders' Association announces the following programme for their eleventh annual meeting, to be held in Assembly Hall, World's Columbian Exposition Chicago, Ill., October 13th, 1893:—Address—S. E. Morton, President, Campden, Ohio. Reports—John G. Springer, Secretary and Treasurer, Springfield, Ill.; The Swine Industry—Hon. J. Stirling Morton, Secretary of Agriculture, Care of Boar—Charles J. Stuckey, Atlanta, Ill.; discussion led by I. N. Barker, Thornton, Ind. Care of Sow—George F. Davis, Dyer, Ind.; discussion led by J. B. Cunningham, Edin. Ill. Swine Feeding—Theodore Louis, Louisville, Wis. The Breeding Pen—George S. Prine, Oskaloosa, Iowa; discussion led by A. J. Lovejoy, Roscoe, Ill. Necessity for Thorough Organization—W. W. McClung, Waterloo, Iowa; discussion led by S. H. Todd, Wakeman, Ohio.

THE SWINE BREEDERS' ASSOCIATION'S PRIZE ESSAYS.

The Executive of the Dominion Swine Breeders' Association determined to offer a first prize of \$10.00 and a second prize of \$5.00 for the best essays on the subject, "How shall the general farmer manage his swine so as to realize the greatest profit?" A large number of excellent essays were sent to the Secretary. The examining committee, viz. Messrs. R. Gibson, Delaware, Ont., J. E. Brethour, Burford, Ont., and S. Coxworth, Claremont, Ont., and R. H. Harding, Thorndale, Ont., found it very difficult to decide who should receive the prizes. The judges were compelled to pass over some very able productions. It was eventually decided to award Mr. W. C. Huff, Mountain View, Ont., the first prize. Second prizes were awarded to Messrs. Walter Cowie, Valens, Ont., James Sharp, Everton, Ont., and W. J. Haycraft, Agincourt, Ont.

THE DOMINION SHEEP BREEDERS' ASSOCIATION'S PRIZE ESSAYS.

The Executive of the Dominion Sheep Breeders' Association offered a prize of \$10.00 and a second prize of \$5.00 for the best essays on the subject, "How shall the general farmer manage his sheep so as to realize the greatest profit?" As in the case of the Swine Breeders' Association, many excellent papers were forwarded to the Secretary. The awarding committee, Messrs. J. C. Snell, Edmonton, Ont., John Jackson, Abingdon, Ont., and R. Gibson, Delaware, Ont., found it difficult to decide who among the essayists was entitled to first money. They also found it imperative that several excellent papers be rejected. This is to be regretted, but the ground covered by the rejected ones is fully covered by others and as it was impossible to publish all, it was decided to make a judicial selection of such as would jointly bring out the greatest number of good points without going over the same ground again and again. The first prize was awarded to Walter Cowie, Valens, Ont. Second prizes were given to Messrs. James Sharp, Everton, Ont., A. P. Kitchin, Bruceville, Ont., James Bowman, Guelph, Ont., John Dickin, Milton, West, Ont., and Charles Ellis, Parkdale, Man. Between the first prize essay and the others there is very little difference, but the majority of the judges gave Mr. Cowie's production the highest score. Each writer makes many good points, yet each leaves unsaid that told by others. Several are weak in some points, yet very strong in others.

NOTICE.

HARVEST EXCURSIONS.

On August 22nd, September 12th, October 10th, 1893, the Chicago, Milwaukee & St. Paul Railway Company will sell tickets at standard single fare plus \$2.00 for the round trip from Chicago to points in Iowa, Minnesota, North and South Dakota, Kansas, Nebraska, Colorado, Wyoming, and to points in Manitoba as far as and including Brandon. For rates of fare, time tables and full information, send to A. J. Taylor, Canadian Passenger Agent, Chicago, Milwaukee & St. Paul Railway, No. 87 York Street, Toronto, Ontario.

STANLEY MILLS & CO., HAMILTON, ONT.

This enterprising and reliable firm of general merchants is out with their new Fall Catalogue, which they offer to send free to all farmers who are interested enough to ask for one. We wish to impress our readers that a great amount of general information may be had from all mercantile catalogues, and when they are offered simply for the asking, it would be no harm to take advantage of our advertisers' offer. These books are gotten up at great expense, and always contain information of value to farmers. The particular catalogue in question is a book of 64 pages, liberally illustrated, and containing over 5,000 prices of articles which farmers use and buy every day, and you consult your own interests by becoming the owner of such a book.

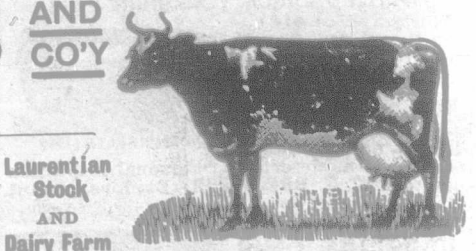
Stanley Mills & Co., of Hamilton, are a firm of wholesale general merchants who conduct their business upon a strictly cash basis, and who sell direct to the farmers. They pay the freight to all stations in Ontario, and allow a liberal rebate to purchasers outside of Ontario in lieu of the freight. Their catalogue, which is yours if you send your address to them, explains everything very fully.

The variety they offer apparently includes everything, at least such articles as stoves, horse blankets, fur robes, fur coats, fur caps, farmers' winter mitts, harness, crockery, boots and shoes, scales, cutlery, soaps, patent medicines, stationery, a complete assortment of tools, watches, clocks, jewelry, and a thousand other articles too numerous to mention here.

Again we urge our readers to, one and all place themselves in possession of this book.



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Our flock is from the choicest English flocks, headed by the ram sent out by Mr. Thos. Dyke; also milking Shorthorns, with imported bull Pioneer at the head of the herd.

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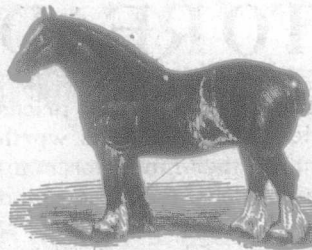
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Imported Emperor at the head of a grand lot of Imported and Canadian-bred Ayrshires; also St. Lambert Jerseys and Imported Berkshires.

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1400 acres fenced, about 350 acres cultivated, 200 acres of timber, good house, ample stabling for 150 head of cattle and forty horses; also other buildings. From its superior situation, quality of land, valuable buildings and proximity to Winnipeg, this makes one of the best farms in Manitoba. The place is at present in good running order, and is well stocked with horses, cattle, pigs, etc.

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For sale by hardware dealers generally. If your dealer does not keep them write to B. R. HAMILTON & CO. Patentees, Neepawa, Man. 48-y-m

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near Gainsboro, Carnduff, Oxbow, Estevan. Having resided for ten years in the Souris district, and being thoroughly acquainted therewith as a practical farmer, I am in a position to locate farms for parties who wish to take up homesteads, and will furnish full instructions of how they may be obtained and save all travelling expenses. Improved and unimproved farms also for sale.—J. W. Connell, Carnduff, Man. 41-y-om

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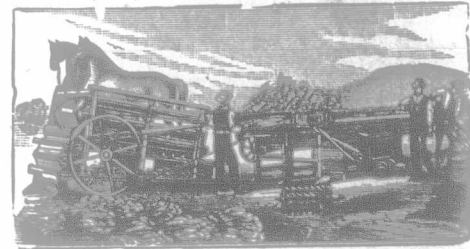
There is no place in Canada where the season is longer than here. Hence we get trees brought to the fullest maturity, capable of withstanding the severest cold. Having one hundred acres in fruit, from which cuttings, buds, scions, etc., are taken, I can safely guarantee the purity of my stock to be equal, if not superior, to any other nursery. The soil is specially adapted to produce vigorous, hardy trees, a grand lot of which are now growing and for sale. All the leading sorts of both old and new varieties deemed worthy of propagation. Catalogues free on application. Agents wanted in every township. 337-y-om E. D. SMITH, Winona, Ontario.



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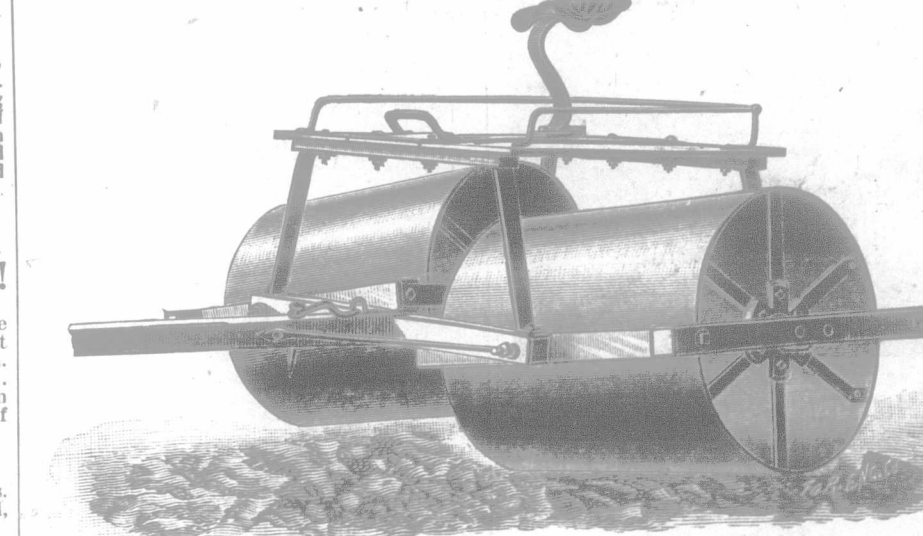
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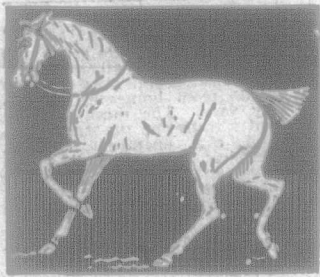
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Its policies protect the owners of valuable animals against loss from death from any cause, including the hazard of campaigning and transportation or otherwise.

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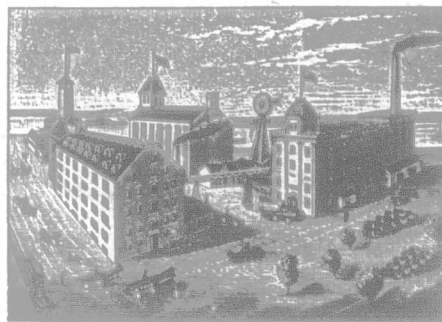
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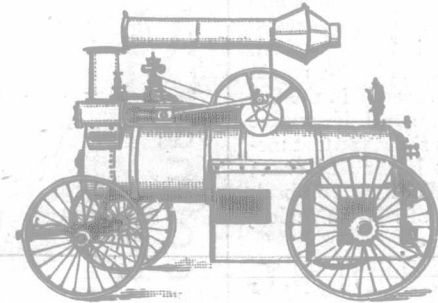
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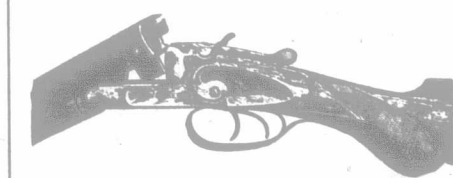
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