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THE FARMER'S ADVOCATE

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VOL. XXXV. WINNIPEG. NOVEMBER 5, 1900. MANITOBA. No. 513

CONTENTS OF THIS NUMBER.

A Battle of Giants.

MR. A. HUGHES, druggist, Medicine Hat, reports a battle between two stallions on the Shannon ranch near that town. A heavy Clyde stallion got loose in the stable one night, and fiercely attacked a valuable blood stallion. When discovered in the morning, the poor brute was one mass of ugly bites from the withers to the ears, the mane being deeply bitten into the flesh. Every one who saw the horse the next day or two strongly advised shooting him—all but Mr. Hughes, who recommended Dr. Warnock's Ulcerure, and persuaded Mr. Shannon to try it. The result was that in a couple of weeks all the wounds were completely healed. Mr. Shannon now believes that Ulcerure will heal any kind of a wound, no matter how bad. Sold in large bottles at \$1. Made only by the

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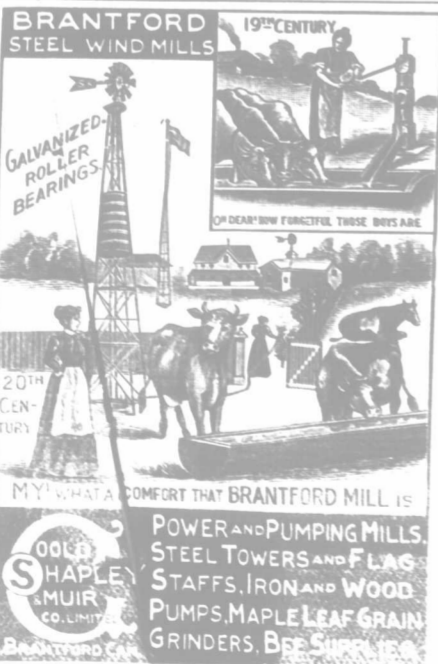
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* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.*

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Vol. XXXV.

WINNIPEG, MAN., AND LONDON, ONT., NOVEMBER 5, 1900.

No. 513

The Importation of Nursery Stock.

In order to meet in some measure the demands of the West to allow the importation of fruit trees from the States to the south of us, which is prohibited by the San José Scale Act, the Dominion Government last spring amended the Act so as to allow the importation for a limited period, under certain restrictions. It has now been arranged that trees may be imported, from October 15th to December 15th, under similar restrictions. For the West, the port of entry is Winnipeg, and here all nursery stock must be put through a process of fumigation. This is done under the direction of the Government, at their expense. Hydrocyanic acid gas is used; it is highly poisonous, and to withstand the fumigation the nursery stock must be well matured; and there may be some difficulty in procuring stock matured—in the southern part of Minnesota, for instance—and have it reach its destination in Manitoba or the Northwest in time to get it in the ground before the frost sets in. It is extremely difficult to understand why such an embargo should have to be placed on the only nursery stock that is at all suitable to the needs of this Western country, especially as it is claimed that no San José scale exists in Minnesota, while we are allowed perfect freedom to import carloads of Ontario nursery stock, that is really of little use to us and where the San José scale is rather prevalent. However, such is the law, and such being the case, it seems a pity that the authorities could not have completed these arrangements earlier in the season, so that due notice could have been given, that those wishing to procure nursery stock could have had a better chance of doing so.

Possible Benefits from the Wet Spell.

Owing to the unprecedented moisture and warmth of September, there has been a greater germination of weed seeds and shelled grain in the stubble fields than we have ever seen before. Oat stubbles, in many cases, grew a second crop, which yielded a fair cut of feed, and all grain fields that were early cut sent up a luxuriant aftergrowth. Summer-fallows, in many cases, became a mat of weeds, that required severe cultivating or plowing to prepare the surface for the drill. In some districts, it was no uncommon sight to see fields yellow with mustard or white with stinkweed as late as the middle of October. This extraordinary germination of seeds that lay on or near the surface will have done more to free that portion of the soil of weeds than weeks of cultivation in ordinary dry summer weather; but when this surface has to be turned down by deep plowing, and a fresh layer left on the surface, which may be full of weed seeds, there is no guarantee of any relief from the weed nuisance next year, and this should be borne in mind when laying plans for next season's cropping.

One of the commonest consolations for the excessive wet during the past harvest is that the moisture will insure next year's crop, but unless intelligent cultivation is given, so as to provide a soil mulch to retain that moisture in the soil for the use of the growing crop, little benefit may be derived, for the conditions may easily be such as to favor rapid evaporation from ill-prepared land. A roughly-plowed, lumpy surface or one fined down and then allowed to crust over assists very greatly in evaporating moisture from the soil. Shallow and frequent surface cultivation with harrow or weeder helps to overcome these conditions, and does no harm, except when soil is liable to drift, in which case its mechanical condition must be attended to by seeding down to grass. Certainly the moisture that has fallen has given the soil a soaking that, under normal conditions, cannot but help next year's crop; it has given all grass lands an added vigor that is sure to tell favorably on them, and it has also been helpful in rotting new land and putting it in first-class shape for next year's seeding.

Steer Feeding.

Is there any money in feeding beef cattle this winter? For the man who has a supply of fodder and facilities for feeding and handling stock without waste of labor, there is no reason why a profit should not be made. But much depends on the facilities a man has for handling the stock with a minimum of labor, for at best there is not room for a large margin of profit. Those who have not got accommodation for handling mature cattle might make good wages by putting in a bunch of calves, for there is an ever-growing demand for good, thrifty, well-grown stockers for the Western ranges, and the American buyers are always ready to pick up good-quality stuff. Calves can be wintered very cheaply, if in warm, dry quarters, on hay, or even good straw if cut and steamed or moistened, and bran and oat, barley or wheat chop sprinkled over it.

Experiments have been conducted at both the Indian Head and Brandon Experimental Farms in feeding straw, wheat, oats and barley, against hay, together, of course, with roots or ensilage and grain. The tests at Indian Head show strongly in favor of wheat straw, and a Brandon test, with wheat and oat straw as the main portion of the ration, showed that a respectable profit can be made in steer feeding without hay at all. In this test six steers were bought at \$3 per cwt. and sold at \$4.85. Food cost \$7.55 each, and they averaged a profit of \$20. Of course, in this case ensilage was fed along with the straw, and equally good results could not be expected without ensilage and roots, but if straw is cut, moistened, the chop mixed with it and then allowed to stand in a pile to warm up a little, good results can be had. A feature that must no longer be lost sight of in the wintering of stock is the value of the manure product. Steers that run in loose boxes can be made to convert a big pile of straw into manure of the very best quality, that can be handled with a minimum of cost for labor. Where so much of our land has lost its humus and dries out and drifts or bakes, manure must become an important factor in restoring such land. Mr. S. Martin, in our issue of July 29th last, page 386, tells briefly how he successfully fed steers and hogs in loose boxes, and if stock-feeding can be done in his district (near Routhwaite), which is generally considered a wheat section, it can be done almost anywhere.

Prepare for Winter.

Now that the hurry-scurry incidental to a long, drawn-out harvest and threshing season is about over, the fag ends of the fodder crop gathered together, and other field work pretty well in hand, preparations for the short days and long nights of winter are in order. One of the things that will commend itself as of first importance to every right-thinking person is the necessity of providing a generous supply of suitable literature for each member of the household. We boast of the intelligence and high moral tone of our people in this Greater Canada, and if we are to make this boast good in the practical upbuilding of this new country, it behooves every one to see to it that the young people—the boys and the girls—are encouraged to read, and to read the right kind of literature. But apart from this, there are many matters that will require immediate attention about almost every household. The work of the women in this country is, generally speaking, most arduous and exacting; help is, in most cases, out of the question; but there are many ways in which a thoughtful man may lighten these household cares, by providing a liberal supply of wood and water convenient for use, by providing the power to run washing-machine and churn. For this, no expensive gasoline engine is necessary; just let the master himself or one of the men furnish the "elbow grease." It is,

however, unnecessary to enumerate further the "little things" that would so greatly help in reducing the burdens of the women folk; every man can see dozens of ways of doing so if he only looks for them. Even a pair of hinges on a cellar door would, in many cases, be an appreciated blessing. About the stables, poultry houses and outbuildings there are many minor things that, without the outlay of money, can be made more convenient, saving steps and economizing time every working day for the next four or five months. We are so apt to get into ruts and continue to go a long way 'round simply because we have got accustomed to doing so, when, with hammer and nails and saw, we could in half an hour make a short cut that would save hours of time. The manufacturer is ever studying to reduce labor and cost of production in every detail, and it is equally essential that the farmer should do the same. The ability to read and think and plan will not grow in a man unless these faculties are exercised, and it is only the man who can think and plan that need look for success on the farm under the conditions of to-day. Read the best literature relating to your own profession; learn what others are doing, and profit by their experience.

Look Out for Ringworm.

After taking the calves in look out very particularly for ringworm, which so often makes its appearance among calves soon after they are stabled in the fall. Ringworm is caused by parasites, which burrow under the skin and cause the bald, scurfy spots, and while it is not fatal in its attacks, it causes a certain amount of irritation and restlessness, which interferes with the thrift of the animal. Treatment is very simple, and should be applied as soon as the disease appears, and repeated every three or four days. Wash the parts with warm water and soft soap, rubbing vigorously to remove the scurf, then apply carbolic acid mixed with four times its bulk of linseed oil; iodine ointment is also effective. The walls and mangers of the stable in which affected animals are kept should be thoroughly disinfected with disinfecting fluids or hot lime wash in order to destroy the spores of the disease, which remain active for a long period.

Quality, Not Pounds.

In an editorial admonishing its readers to caution in the development of their live-stock operations, the *Wallace Farmer* thus sums up its argument:

"The stock business is quite different from raising grain. There are a whole lot of things in it that can be learned, like the precepts of the Good Book, only by doing them; in other words, by actual experience. As the family is likely to increase as fast as the ability to take care of them, clothe and educate them, so a reasonable amount of live stock, properly managed, will increase about as rapidly as the farmer's ability to handle them properly. In other words, the forces of nature that work for multiplication are fully as well developed in man and beast as the forces that make for the development and growth of the increase. The important point for the farmer is to secure good males in every department of his farming operations. Here is where most farmers break down. The profits in live stock are not in the pounds, but in the quality of the pounds, or their selling price on the market; hence, better raise fewer individuals and have them of the best, at least while you are learning the business, and do not make the change from grain-growing to stock-farming too rapidly."

Obituary.

We regret to chronicle the death of Mr. W. T. Muir, which took place at his home, near High Bluff, on Oct. 18th. Mr. Muir was serving his second term as Reeve of the municipality of Portage la Prairie, which attests in some degree the esteem in which he was held. He was a good farmer and a sterling, kindly neighbor. He leaves a wife and young family to mourn his loss. Mr. Muir was an occasional contributor to the *FARMER'S ADVOCATE*.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

PUBLISHED SEMI-MONTHLY BY
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Our "Twentieth Century" Christmas Number.

For the last few years we have supplemented the substantial and attractive bill of fare upon which our readers are regularly regaled with a large and handsome Christmas number, which has met with warm appreciation. Plans have been matured to treat our readers to another souvenir issue next month of a character that will sustain in wealth of pictorial and literary matter the high reputation heretofore achieved, which, in its own domain, has caused the Christmas FARMER'S ADVOCATE to be regarded by common consent as surpassing those of any other publication. As we go to press we can only give this brief foreshadowing of the good things to come. As was announced in a previous issue, we are now giving all new subscribers for 1901 the balance of the year free, including the Christmas issue. Our subscribers should secure all the new names they can without delay, and thus secure some of our valuable premiums. Parties wishing to secure the advantage of special advertisements in this issue, should write us at once for particulars.

More Favorable Outlook.

In an issue of the FARMER'S ADVOCATE reference was made to the disastrous effects of the "century" weather during the past season throughout all parts of Manitoba and the Territories. That outlook was taken on one of the gloomy soaking days toward the end of September, but subsequent personal inspection and inquiry reveal the happy fact that the extent of injury, especially in some of the western districts, has been overestimated. Along

the main line of the C. P. R., from Indian Head to Moose Jaw, including the district contiguous to Lumsden, there has not been near the rainfall that prevailed further east, and the crops in consequence have suffered comparatively little. About Rosthern and Saskatoon, excellent crops have been gathered in very good condition; and a correspondent writing from Prince Albert, under date of the middle of October, says that the crop is safely harvested and a large percentage of it threshed, and the returns, both as to quantity and quality, are all that can be desired. "I do not think," he adds, "I ever saw a better all-round crop than the present one."

In many districts where it one time looked as though the crop was a "gonner," the yields from the thresher have been surprisingly good, and the quality, notwithstanding the hardships which the stooks so long exposed to rains had to endure, has turned out far better than could have been hoped for. There will be, after all, a fair quantity of wheat of good milling quality, even when there are present in it a few sprouted grains to spoil the grade. Such wheat should bring a good price, as there is comparatively little wheat that will go into the higher grades. While our big exporting mills, as well as the local mills, must have sufficient good milling wheat in order to maintain the standard of their flour, those having "tough" or damp wheat will do well to dispose of it as quickly as possible and run no risk of its spoiling on their hands; and now that drying plants are installed at various points, it should be possible to handle damp wheat without much loss.

Searching Hardy Fruits in Dakota.

The following interesting extracts from a letter by Prof. Hansen, of the South Dakota Exp. Station, which recently appeared in the *Minnesota Horticulturist*, will be read with interest by many:

"The specimen crab you send is evidently of the hybrid crabs, as the calyx is persistent. Its value for stocks would have to be proven by experiment. If the tree is perfectly hardy, so much so that the seedlings will be hardy the first winter after sowing the seed, even when the temperature reaches 40 degrees below zero, with the ground bare of snow or much of any kind, then it will probably be safe to use. The reason why I insist so much that perhaps the pure seedlings of *Pyrus baccata* will be better than any of the hybrids is that it is a thoroughbred,—and such are always more fixed in their characteristics than any of the mixed parentage. Hence, it is evident that pure-bred seedlings of the primitive Siberian will be apt to give more uniform results than any of the hybrids. As you go north, also, the pure Siberians will be hardier than the hybrids. Another thing, I think pure-bred seed will germinate more uniformly, as a rule, than hybrid seed. I have heard of some evidence to this effect, but the whole subject needs to be worked out by experiment. German and Russian experience favor *Pyrus baccata*. These are represented in cultivation in the West by the old Cherry crab and the Yellow and Red Siberian.

"I am saving the seed of many varieties of crabs this year, and hope to do my full share in settling this greatest of all questions in the apple line for the Northwest.

"Your question in regard to the cherry is very interesting. The law or general rule in this matter is that all cherries with flowers in racemes will not inter-bud or inter-graft with any of the kinds whose flowers are in clusters. Of course, they can be made to unite for a time, but the union is short-lived. Applying this rule, you will find that cultivated cherries work well on the wild pin, pigeon or red cherry (*Prunus Pennsylvanica*), but do not succeed on the wild black cherry (*Prunus serotina*). As to pears on apple, the union has been found to be short-lived. Pears would do better on hawthorn or mountain ash. I have them growing on Juneberry now two years, but the union, I fancy, will not be long-lived, owing to the excessive dwarfing of the pear-top.

"As for the Compass, if you want a nice experiment, try seedlings of this variety. The rule is that all seedlings of hybrid plants are apt to sport a great deal, as you know, and that they revert to one or the other parent, and sometimes interesting results appear, due to the reversion to some previous ancestor. New characteristics also frequently appear, due to the "breaking up" of the fixity of type. I will try this with the Compass—Knudson's Sand Cherry, or the Compass Sand Cherry, should be the common name, because the name 'cherry' is rather misleading.

"I am growing some of the choicest American winter apples in pots and boxes, and using the pollen on Hibernial, and vice versa. I hope to get an 'orchard house.' I am working with several odd types of the apple, including a seedless apple and a red-fleshed apple, but such work is very slow. I am working very extensively with the growing under cultivation of many of the native fruits, and expect to make a few additions to our prairie pomology."

Indian Head Experimental Farm and District.

On the great wheat plains of the Indian Head district, the eccentricities of the weather during the past season have, as in other Western farming sections, been seriously felt. For years the big wheat-growers on these fertile lands have been most successful, have met few reverses, and, in consequence, there has been a great tendency toward expansion. Almost every one has been buying more land, and high-priced land at that, without apparently taking into account a possible crop failure, so that this check may prove a "blessing in disguise," warning people that it is possible to load up too heavily with land, no matter how good that land may be. To a visitor there is lack of *home-building* throughout this much-favored section that is disappointing. There are comparatively few stock barns being built, few tree plantations growing up about the farmhouses; in fact, it looks as if every effort was concentrated upon the production of much wheat.

The one thing that has been emphasized more perhaps than any other is that the mechanical condition of the soil must be attended to. There is still ample fertility, but the constant cultivation has worn out the humus or root fiber, and, in consequence, the soil that has received most work in order to have it in fine condition, drifted badly under this season's conditions. This is well illustrated on the Experimental Farm, where the drifting was most disastrous on many of the highly-cultivated plots; in fact, in some cases the fences were buried under soil drift and the crops completely blown out. But the remedy for this is also to be seen on the Experimental Farm, where adjoining the drifted plots were other plots that did not drift a particle. These had been under grass for one or more years, and the grass roots held the soil down and at the same time retained more moisture, and, as Superintendent McKay said, "about the only good crops we have are on these grass plots or where protected from the winds by our shelter belts."

The man who adopts a grass rotation, utilizes the fodder and pasture and straw, by breeding or feeding stock, provides good buildings, fences, etc., will, without a doubt, come out in the long run ahead of the man who spreads himself over many acres and makes wheat his only aim.

Notwithstanding the many drawbacks of weather, there have been some fine crops on summer-fallows, and the condition of the grain is fairly good, plenty of it equal to No. 1 hard, but for an occasional sprouted kernel. The town of Indian Head has made great strides during the past year, many substantial brick buildings having gone up. There are eight standard elevators at this point and also a grist mill.

THE EXPERIMENTAL FARM

has not escaped the effects of drought, wind and rain; but the master hand of the superintendent is to be seen in the excellent condition of every department of work, as far as the skill of man could overtake it. Everything is trim and the work well in hand, roads graded and surface drains cleaned out, and every detail receiving attention. Test plots will not give satisfactory results, so many varied circumstances have intervened to knock calculations to the winds. Some plots on grass lands or protected by shelter belts will give good returns, while others were drifted and scorched beyond recovery. The grasses have not yielded seed, but have thickened into excellent pasture, while late-sown Bromo seed has given a fine catch. Mr. McKay finds no difficulty in completely disposing of Bromo sod by breaking shallow in June in dry weather and backsetting when rotted. He has also found that when wanted for pasture or when it becomes root-matted that by plowing rather deeply in wet weather it comes through again and is greatly invigorated. The corn crop was one of the best ever raised, and 100 tons of ensilage, part of which is green-cut oats, has been put up. Roots have been a fair crop generally, while the potato crop, with over 80 varieties, is one of the best ever raised on the farm, some of the varieties showing a yield of about 800 bushels per acre. It has been a trying season on trees, and they have made little growth. Many of the small-fruit bushes made new wood later in the season after the rain set in, which may seriously affect their fruit-bearing next year. For the first time in the history of the farm, an excellent crop of plums and crab apples was secured, the Atkin plum having given a particularly good account of itself.

A fairly good bunch of cattle, principally Short-horns, are kept. All are in fine condition. At the head of the Shorthorn herd is a two-year-old roan son of Judge, out of Freida, purchased from the Prairie Home herd of Mr. Greenway, at Crystal City, Man. He is a low-down, thick-set bull of good feeding quality, and his calves are coming of much the same type. An Ayrshire bull from the Central Farm and a Guernsey from the Hon. Sidney Fisher's are also kept for the benefit of those who wish to use dairy sires. In swine, Berkshires and Tamworths are kept.

Conditions in Red River Valley South of the Boundary Line.

The weather and crop conditions of the past season, throughout the upper Red River Valley, in the States of Minnesota and North Dakota, have been just such as have been experienced in Manitoba. Prof. T. A. Hoverstad, of the Dakota Experiment Station, writing in the *Student's Review*, reviews the situation and prints some lessons that may be taken home by us all:—

It is hard to conceive of a season that could offer

drought, was the weak chaff the straw had, so the grain was easily shelled. Thousands of bushels dropped from the heads before the grain was harvested. The heavy rains during the early part of the harvest delayed cutting very much, which made the damage from shelling larger than it otherwise would have been. The rains have also delayed threshing and much grain is damaged in the shocks and fall work is very much delayed.

A larger variety of crops should be raised. The past season has shown that it is hazardous to depend too closely on one crop. While grain and hay crops were making little or no growth, cultivated forage crops seemed to grow very well. The nice fields of corn, sorghum, rape, millet, peas, etc., show that some crops can grow well when others fail. Besides this, the above table shows that a variety of crops may affect favorably future crops raised on the farm.

More live stock should be kept on the farms. It is encouraging to see that large numbers of pure-bred cattle are brought into the Red River Valley. When more stock is kept, better use can be made of the crops raised on the farm.

The Falling Leaves.

The autumn season, which ends with the fading and falling of the foliage that has during the summer months rendered the forests and orchards beautiful and fruitful, is apt to bring to many minds a sense of sadness akin to melancholy, a feeling caused doubtless in some degree by a consideration of the analogy which the brevity of human life bears relatively to the term and fate of the

leaves as expressed in the Scripture phrase, "We all do fade as a leaf." An intelligent consideration of the agency and functions of the leaves in the economy of nature will tend to dispel that feeling. Botanists tell us that the leaves of the tree are to its existence equivalent to the lungs in animal life; that they are the breathing apparatus of the tree or other plant, which gather from the atmosphere the gases that are so largely instrumental in sustaining life and imparting health and vigor to the living subject, and that the influence and effect of the work of the leaves of each succeeding year in the life of the tree is seen not only in the increased size and strength of the tree, but is also plainly visible in the construction of the substance of trees, as seen in the rings or circles readily traced in a transverse section of the tree when cut across its full diameter, by which it is claimed its exact age may be computed. But we are told that evidences of the influence of the leaves is not confined to those above indicated, but that they impart their life to the formation and feeding of the germ of the succeeding leaf, so essential to the life of the tree during the following spring and summer seasons, and that before the leaves in autumn drop from their place the genesis of the future leaf is an actual fact visible to the careful observer, and has acted a part in removing the old leaf from the stem or from the branch. The usefulness of the leaves does not even end with their fall, as in normal conditions they serve as a mulch to the roots of the trees, protecting them from the effects of severe frosts in winter and protracted droughts in summer, besides enriching the soil for the future growth of the tree by nature's favorite method—the surface application of fertilizers in the form of humus or decayed vegetable substances. That the influence of the life of the leaf does not even end with the processes thus far outlined is attested by scientists, who claim that the vast deposits of coal in the

bowels of the earth, from which are drawn the supplies for heating our houses and generating the steam and electric power which drives the machinery and commerce of the world, are but the result of the disintegration of wood and other vegetable matter accumulated during the millions of years of the earth's existence, and which at one time were nourished by the leaves of trees appropriating the sunbeams, imparting them to the substance of the trees and handing down to succeeding ages the comfort and help which we derive from the dusky diamonds which come to us from the coal mines in this stage of the history of this old world.

Should not a true appreciation of the lessons taught by the history of the unconscious leaves lead us to a contemplation of the possibilities of the influence of conscious human life, with its numerous opportunities for usefulness and helpfulness, the influence of character upon ourselves and its reflex influence upon those with whom we associate in the varied relations of life, impress upon every mind a deep sense of the responsibility that attaches to a human life? If the influence for good of an insensate leaf may extend through untold ages, what limit can be placed on the favorable influence upon succeeding generations of a well-spent rational life, with the advantage of all the supreme gifts with which it is endowed, its capabilities of acquirement and development, and in view of the illimitable future of an immortal being? A proper conception of the importance of the privilege of living in the present age, under such free institutions of government as are enjoyed in Christian countries, would seem to be to regard life as a luxury, to be grateful for existence, and to cherish high resolves to make the best possible use of its opportunities, so that whether the falling of the leaf or the end of the term of earthly life comes soon or later its work in both moral and material lines may have been well done.

Regina District.

Gradually the heavy, stiff clay banks surrounding the Territorial capital at Regina are being brought under the plow. Most of the land has within the past year or two been taken up by actual settlers, and in a few years more this erstwhile barren plain will be pouring its golden grain into the Regina elevators. A few miles to the west and north, where the soil is lighter and not so tenacious, in the Cottonwood, Lumsden and Boggy Creek districts, the land is already nearly all under cultivation, and even this year can boast of some splendid crops, numbering from fifteen to twenty-eight bushels per acre, and most of it of good milling quality. Showers favored this strip of country in the early season, and the harvest weather, although not good, was nothing like what was experienced further east, in Manitoba. Evidences of prosperity meet one on every side. Big stock barns are going up and preparations being completed for rotating with grass and feeding stock to utilize the grass and roughage and to make manure. Near the Cottonwood, the Mutch Brothers have



DERMOD.

Thoroughbred stallion, winner of first prize and sweepstakes at Winnipeg Industrial and Brandon Exhibitions, 1900.

PROPERTY OF F. THOMPSON, M'GREGOR, MAN.

a more encouraging outlook from the start than the presented in the Red River Valley. The soil was in good condition to receive the seed, and the texture and the amount of moisture in the soil was nearly ideal, so all work could be done with ease and be done well. All seeding was done early and in the best manner. The weeds were easily destroyed, and the tillage of cultivated crops was done with no hindrance. All the early seed germinated nicely. All through the growing season the grain retained a healthy green color. When the spring was well advanced, and little or no rain falling, the growth of the grain was very much retarded. Many of the stools died. This left the grain short and thin. At one time it looked as though there would be almost no crop of any kind. Grass was too short to make hay at the time haying should have commenced. At this time the farmers became alarmed over the situation. The main cause of anxiety was the lack of suitable forage, and the "paramount issue" became how to provide food for stock during the fall and winter. This afforded an excellent opportunity for the introduction of a class of crops hitherto very little grown in the Red River Valley. Forage crops, especially corn, became very popular, and large fields were sown, and the value of corn to provide forage became apparent. By June 30th, rains began to fall and all crops revived. From that time on the temperature and the moisture was very favorable to the best development of grain. The wheat filled well, so the quality of the berry was good. In some places the fields were cut for hay, and some small areas were summer-fallowed, the farmer thinking that the amount of grain harvested would not equal the expense of harvesting and threshing. On many farms an average crop was harvested. From some localities very good yields are reported. The crop presented all conditions from utter failure to good yield.

Only small amounts are threshed yet, so average yield cannot be reported. On the Experiment Farm only the "plots" are threshed. In the rotation experiments, forty-three plots were sown to wheat this year. In these the smallest yield was 9.8 bushels per acre. The best yield is 32.7. The average is 22.5 bushels. The difference in the yields is due to the different crops raised on the plots during 1899. It may be of interest to report the yields of wheat this year as affected by the crop of the previous year grown on the same plot.

In the following table these results may be seen:

Crop in 1899.	Crop in 1900.	Yield of Wheat in 1900.
Flax	Wheat	12.3
Barley	"	19.1
Oats	"	20.7
Wheat	"	21.1
Peas	"	22.3
Corn	"	24.1
Sorghum	"	24.3
Millet	"	25.9
Potatoes	"	31.2

One of the drawbacks this season, besides the



KYRA'S HEIR.

Aberdeen-Angus bull, winner of first prize and championship at Toronto, London and Ottawa Exhibitions, 1900.

PROPERTY OF JAMES BOWMAN, GUELPH, ONT.

fine barns in which they feed a large number of steers every winter. They have now 100 acres seeded down to Brome, and soon intend to fence. This summer, Mr. Kinnon, Sr., and his son, George Kinnon, have just completed fine stone-foundation barns, and there are many others. These barns and the substantial houses that are going up, together with many other evidences of home-making, give an air of permanence and thrift to a district that enhances the value of every acre.

The Labor Question in Manitoba.

To the Editor FARMER'S ADVOCATE:

I notice your remarks on the labor question in Manitoba in a late issue of the *ADVOCATE*, and desire to place some information before your readers so that the conditions existing in the past as well as present may be fairly considered. The efforts made by this Department to induce harvest hands to come from Ontario extend back several years. There were two objects in view. One was to secure help for farmers to harvest their crops, the other, and perhaps the one most considered at first, was to bring as many young men as possible at a cheap rate to see Manitoba, her wide prairies and her extensive wheat fields, hoping that many of them would remain with us as settlers, or should they return to Ontario, that they would eventually come west. The double object was secured. The following tabulated statement gives almost accurate figures of the number who came to Manitoba to assist in the harvest fields from year to year:

Year.	Harvest Laborers.
1890	250
1891	770
1892	3,000
1893	2,350
1894	6,000
1895	4,250
1896	10,500
Total	29,390

Many of these remained with us. In 1890, out of the 10,500 who came west, only 50 per cent. used the C. P. R. cheap return ticket. It is safe to say that nearly half of them have remained with us.

For the present year the season was not favorable to bring young men here, from an immigration point of view. Even the labor situation was anything but favorable, for the crop on the 1st of August was reported so light that but few men were wanted. There was a number of idle men in Winnipeg at the time, and the prospects for labor were anything but encouraging. Again, the Department remembers well the outcry that was made in the past years when out of the hundreds or thousands who came to work, perhaps half a dozen or a dozen did not secure work on the day of arrival. For instance, the labor market at Brandon became congested one year, and the dozen unemployed advertised their case far and wide, doing much injury to the Province and to the cause of immigration. Of course, the hundreds and thousands who secured work said nothing about it—simply worked away and made money. Work was found for the grumblers in a few days in other parts of the Province where the demand had not been supplied, free transportation being granted by the C. P. R. to all such laborers. The injury to the Province was, however, done, and there are always those papers ready to eagerly pick up any such disturbance and enlarge upon it without sense or reason. Last year every man secured work, and everything was satisfactory. This year the Department considered the conditions existing carefully: prospects of a light crop; early harvest; desire of farmers to take off crop by their own efforts in order to keep down expenses (a policy approved of by every well-informed man), and hesitated in using any special effort to bring laborers to the Province. Had the weather continued favorable, as usual, during harvest time, there is no doubt but that the crop would have been garnered early without bringing men from the east. Wet weather, however, changed everything, and there was an urgent demand for men. It was too late then, and men could not be got. Perhaps this was well, for the weather continued bad so long that farmers who had engaged extra hands got tired keeping and feeding them for one day's work in a week. The crop was apparently being ruined by continuous rains, and farmers who were most persistent in asking for men were congratulating themselves, after all, that they did not get any. Fine weather set in about the 7th of October, it has continued fine ever since, and farmers are harvesting their crops with despatch. It is to be hoped that the weather continues fine until the last sheaf in the Province is threshed or stacked.

It must be remembered that this Department has no control of the laborers in the east. When Manitoba has a heavy crop and Ontario the reverse, as sometimes occurs, by advertising our want of men we have been able to induce the requisite number of laborers to come to Manitoba for two or three months each year, but when crops are good in Ontario and wages high, it is not so easy to induce men to come to the Northwest, losing time in travelling, paying transportation to Manitoba and return, if there is to be no pecuniary advantage in doing so. Farmers can now discuss this question fairly, and any suggestions of merit that would guide the Department in future will be gladly received.

HUGH McKELLAR,

Chief Clerk, Department of Agriculture,
Winnipeg, Oct. 22nd, 1900.

Central-Saskatchewan Fair, Saskatoon.

The Secretary of the above Association, C. T. Falkner, furnishes us with a list of the prize-winners in the cattle classes. In the class for Shorthorns, T. Copland, Joseph and John Caswell and W. R. Tucker were the principal exhibitors, Copland winning first on yearling bull, first on cow, on heifer calf, and on herd. Joseph Caswell won first on bull and first and second on two-year-old heifers; while John Caswell won first on yearling heifer and first and second on bull calves. In the grade classes, the same exhibitors divided up most of the prizes, Jos. Caswell winning 1st with grade herd,

Shall We Use General Purpose Stallions?

To the Editor FARMER'S ADVOCATE:

The majority of horse-breeders will at once say no. The man who breeds a mare because he wants a work horse or slave (he is no horse-breeder, though) will probably not care whether he answers no or yes. It will depend altogether on the stallion fee. If the G. P. stallion has the lower fee, which is generally the case, that will be the horse, and thus we can account for the cull horse stock in a country.

If, as "Director," in your issue of Oct. 20th states, all farmers bred their mares to get horses for farm work and wanted more weight, the G. P. horse would have nothing to do.

The excuse for using a G. P. horse usually tendered is not to grade up the stock, but to get rid of the hairy legs, and that as cheaply as possible. As far as the objection to heavy stallions is concerned, numbers of registered Clydesdale stallions are to be had, with lots of quality, that will weigh less than 1,700 lbs.

The ancestry of the G. P. horse is a mixed one; if not, he ceases to be a G. P. horse. It can hardly be anything else from the definition as given in the Toronto Industrial prize list, which I quote: "A horse for saddle, buggy, carriage, waggon and plow, mares or geldings; 4 years and up; not to weigh over 1,350 lbs.; 3-year-olds, 1,200 lbs."

When judging that class at Toronto, I noticed the majority of the animals in it were on the light order, evidently the progeny of roadsters, Thoroughbreds or carriage stallions, from grade mares, while the few of the heavy type were the get of heavy stallions, yet not up to heavy draft weight. The G. P. class is composed of the culls from the other types, as a rule; it might be stated that in the general purpose mare we have the parting of the ways. Bred to the Thoroughbred, the Hackney, the Coach or the Standard-bred, you go one way; bred to the Shire, the Clydesdale, the Suffolk or the Percheron, you go the other. Breed a G. P. horse to a G. P. mare and you do not go a step up the ladder; it's a case of "as you were!" Like produce like, therefore it must be so unless we elaborate new rules of breeding and disregard what has happened heretofore. If a mare was not up to weight as a light draft or carriage animal, surely no one would advise using a G. P. horse; that would be a step down the ladder! That good horse-man, Alex. Galbraith, says: "Do not mate an extremely large horse to small mares, the get are never equal to the progeny of medium-sized stallions; the mare usually gives the size. The whole secret in breeding lies in selection—both sire and dam."

"Director's" No. 1 rather begs the question. Because some registered horses are unsound is no argument for the use of a G. P. horse, whether sound or unsound. No. 2 states that the G. P. horse "may throw back." It should be, "is very likely to throw back," unless the mare happens to be the more potent, which sometimes happens; unfortunately, the mare seldom gets the credit. I have yet to see the evidence of intelligent selection in the parentage of the G. P. horse. I grant there may be exceptions—they only prove the rule. If intelligent selection has been made, a G. P. horse will not be the result. The results of such selections are animals practically pure-breds, although not registered; in fact, the studbooks are based on that very principle. Granting that an occasional animal may be all that your correspondent desires, yet so scarce are they that it is questionable if the awarding of money to such a class, in which animals with selected parentage are rarities, is excusable, the money being intended for educational purposes and not to encourage speculation.

A. G. HOPKINS, V. S.

Experiment Station, Madison, Wis.

North-eastern Assiniboia Fall Fairs.

The fall fairs in north-eastern Assiniboia were, on the whole, fairly successful. At Yorkton, the principal exhibitor of Shorthorns was J. E. Peaker, who had little or no opposition. He showed some very good things got by his Indian Chief bull, and also had forward a good aged cow by that celebrated sire. Mr. Lippington, of Saltcoats, took first prize with a very nice yearling bull. The exhibit of horses was very good, although the entries were not numerous. At Saltcoats, Shorthorns were well represented, the cattle being of good quality and size. Mr. Lippington won first in a good class of cows, with a nice, square, tidy four-year-old of Cruickshank type. She was also dam of the yearling bull that won first and sweepstakes. The other exhibitors were Messrs. Blake, Adams, Lennox, Holland, and Smith. At these shows there was a remarkably good turnout of grades, fine, big, strong, thick cattle, showing evidence of many crosses of good Shorthorn bulls, and also proving the suitability of the locality for breeding and raising beef cattle of the highest quality. Among the principal exhibitors were Lippington, Love, Einersson, and Smith, all of Logberg.

At Churchbridge and Logberg shows, there were also good cattle exhibited. Mr. Albright, of Castleberry, showed a very good lot of large, strong Shorthorn grades, having entries in all classes. I. Einersson, of Logberg, was also an exhibitor, and won first with grade herd, which consisted of bull and four females, at the Logberg Show, and also won a number of prizes at Churchbridge. Mr. Smith exhibited a very good Shorthorn bull of the

Ury family, and Mr. Black also exhibited a very nice yearling bull of the same breeding, both of which were bred by Joseph Dugan, Castleberry.

If these several districts could unite and hold one fair at a central point, it would in all probability be made a much greater success than is possible under the present conditions. Mr. John A. Turner, of Millarville, Alberta, acted as judge of live stock at all these shows, having been appointed by the Territorial Government.

Kildonan and St. Paul's Agricultural Exhibition.

The annual fall exhibition of the Kildonan and St. Paul's Agricultural Society, held on Oct. 11th and 12th, was quite equal to any previous exhibition held by the Society. The weather was fine, but owing to the unfavorable season, work on the farms and gardens was not as forward as otherwise would have been the case, and no doubt this kept a good many from exhibiting.

Located in one of the principal market-garden districts of the Province, this fair always leads in field roots and vegetable displays. The quality of the exhibits was above the average, and the directors had taken great pains to arrange the display to the very best advantage so that the hall presented a most attractive appearance, and it is doubtful if a better vegetable exhibit is made anywhere in the Province. Separate classes in the prize list are made for the professional gardeners and the farmers, and, to the credit of the farmers, it may be said that their exhibit is very little behind that made by the professionals. Among the leading exhibitors in the professional class were Thomas McIntosh, who secured the first prize for collection, in addition to many other prizes; H. C. Whellams, whose exhibit of onions was particularly worthy of note; Lay Bros., who captured the first premium for collection of potatoes; Charles Midwinter, W. H. Tomalin, P. McColman, Thomas Mackay, P. Johnsson, W. A. Farmer, W. T. McIntosh; and Mrs. D. Edie, who made a very beautiful display of plants and flowers. In the farmers' class the principal exhibitors were J. R. McDonald and Magnus Harper. Other prize-winners were G. F. Munroe, R. R. Taylor, E. G. McBain, and C. G. Jackson. In potatoes, a particularly fine exhibit was made, Early Puritan leading in number of entries, which would show that it is a favorite variety for this district. The Early Rose was second in number of entries, and the Beauty of Hebron, 3rd.

As little or no threshing had been done in the neighborhood, there were but few entries in the grain classes.

In dairy products, the exhibit was larger than usual, the total number of entries being 50. Dairy Superintendent Murray judged this class, using the score-card for each exhibit, the score running a fairly high average. The first prizes nearly all went to Donald McIvor. Among the other prize-winners were Messrs. Bushnell, James Garvin, R. B. Garvin and R. Jackson, of Bird's Hill; H. O. Ayearst, Middle Church; J. R. McDonald and J. H. Gunn, of Kildonan.

The exhibit of poultry was very good in the utility breeds, Charles Midwinter making a strong exhibit of Minorcas, Leghorns, Houdans, Toulouse geese, and Pekin ducks. Mangus Harper showed Plymouth Rocks; T. McIntosh, Wyandottes, and Donald McIvor, Light Brahmas and turkeys.

In horses there was a decided improvement over previous years, both in number and quality of the stock brought out; in fact, this also applies in the cattle, sheep and swine classes. S. R. Henderson, J. B. Line, Indian Industrial School and E. G. McBain were among the principal winners in light horses. Some good, clean, useful driving horses were forward, mostly of Standard-bred type. J. Benson's celebrated old Standard-bred stallion, Sharper, was awarded first prize for stallion and two of his get. T. L. Hill's Complete, a big, strong Standard-bred, was awarded the diploma. In the Agricultural class some good things were shown. G. Farrar won first on draft team, and also first in a drawing competition; this proved quite an attraction and the winning team demonstrated how truly and well horses can be trained to draw heavy loads. J. W. Toshack won second in team under 2,700 lbs. John McKay was first on a pair of grays of Percheron type; E. Greaves, second; Mackay's team winning second in the walking competition, being beaten by a team belonging to A. Sperring. R. Inch, of Middle Church, showed a very good brood mare with foal at foot in this class, and W. G. Matheson, of Springfield, a promising foal of 1900, winning first money, and Thomas McIntosh, an exceptionally well developed yearling.

In cattle, the Shorthorns made the strongest showing. Messrs. W. S. Lister and H. O. Ayearst, Middle Church, were the principal exhibitors, Lister winning the herd prize, first on two-year-old bull, on aged cow, and first and second on two-year-old heifer, while Ayearst won first and sweepstakes on his white yearling bull, Crimson Sirdar, also first on bull calf, heifer calf, and yearling heifer. R. R. Taylor won first on a three-year-old bull. Ayrshires were shown in good form by James and R. B. Garvin, of Bird's Hill, and Holsteins were shown by John Oughton, of Middle Church. Grade cattle were shown by J. H. Gunn, H. O. Ayearst, John and M. Oughton, and J. R. McDonald. John Oughton showed Shropshire sheep, and M. Oughton, Cotswolds. The Oughtons were also the principal exhibitors of swine.

Our Scottish Letter.

Since writing my last letter, a curious and unprecedented thing has happened: the "foot-and-mouth" scare in Perthshire has turned out to be

A FALSE ALARM.

The authorities, guided by local and eminent vets., rose up in arms against the restrictions, denying that the malady was contagious foot-and-mouth disease, and an independent inquiry was made by the officials of the Board of Agriculture, with the result that within one week after they were imposed, the restrictions were withdrawn and the country was declared free of the disease. There is no foot-and-mouth disease in Scotland; our markets are all in full swing; and the authorities, who too rashly concluded that the disorder was the contagious disease, are being denounced in unstinted terms for dislocating the whole stock trade of the country on a false alarm. Perhaps it was better to err on the safe side; but it was a most unfortunate and disastrous blunder. The honors in connection with the business go to Mr. James Clark, F. R. C. V. S., Comar-Angus, who first challenged the accuracy of the official diagnosis, and his position was sustained by Principal Williams, of Edinburgh Mr. Cope, of the Board of Agriculture, attended on the matter personally on receipt of their report and the local authorities' remonstrance, with the result already indicated. Possibly there may have been other false alarms, and if so, stock-owners have good cause for making serious complaint.

THE MANAGEMENT OF BRITISH AGRICULTURAL SHOWS.

The show season of 1900 is about over, and the general result is to raise the old question of the place and function of agricultural shows. Never having seen one of your fairs or agricultural exhibitions, I am unable to say whether they bear any resemblance to our agricultural shows in this country, but I understand you are being impressed with the absurdity of making the agricultural element a mere side show, and that some are determined to bring it to the front and relegate all else to the background. The two national societies in this country, the Royal (in England) and the Highland (in Scotland), have pretty resolutely set their faces against the side-show element, but with varying results. Of course, a good deal depends on what one would call a side show. At the Royal, there is no hurdle jumping, and except for the presence of a first-class military band on the four days succeeding the judging day, the attractions are purely agricultural. The implements and machinery must all have a relation to the staple industry, and the live stock and produce departments are agricultural and nothing else. The Council of the R. A. S. E. deserve great credit for having so consistently set their faces against the circus and cheap-jack element, and made their show a genuine agricultural exhibition; but, unfortunately, the issue has not been encouraging, and the Society is at present in a very tight place. It has lost heavily on its last three shows, at Birmingham, Maidstone, and York, and it has now resolved to abandon its time-honored system of holding migratory shows, and to settle down in a permanent site somewhere near London. Many gravely doubt the wisdom of this step, and I am bound to say that I am one of those who regret the resolution, believing that everything has not been done which might be done to make these shows financially successful. The implement yard has been allowed to grow out of all bounds, and instead of being an exhibition yard in which each firm exhibited an article of each kind, it has become a series of open-air agricultural warehouses in which sale first, and novelty afterwards, was made the leading feature. Whatever may have led to their unpopularity, it is clear that shows like the Royal, run on rigidly agricultural lines, have, so far as England is concerned, been anything but financially successful during the past year. I do not think this is due to the absence of the circus element, but rather to temporary causes, and, in any case, it is gratifying to observe that, unless horse jumping be included, as of the circus variety, there is no disposition in connection with these great shows to abandon their distinctive character and introduce features of the type common at country fairs.

The experience of the Highland and Agricultural Society has, in respect of its shows, of late years been peculiar. For a series of years its exhibi-

tions were unpopular, and, in general, it was in a sort of moribund condition. In 1883, Mr. James Macdonald became its secretary, and its course since has been one of unbroken and uniform success. Its shows are held on circuit, and since 1883 it has made money at all of them except that at Kelso in 1898, and profit was not expected there. There always was jumping (of a kind) at the shows of the Highland; but Mr. Macdonald, having been for three or four years Manager of the Dublin Horse Show, introduced the Dublin system at the Highland, with the result that the jumping seen at its shows has in recent years been of a distinctly high order. Whether this may be classed as an element foreign to agriculture, I will not say, but unless it be so classed, the attractions at the shows of the Highland are purely and severely agricultural, and their success, apart from such circumstances as weather, over which humanity has no control, is a strong argument in favor of an agricultural show, being kept as such, and not transformed into a cross between an open-air circus, a trotting track and an agricultural exhibition. Of course, both the Royal and the Highland encourage Hackneys and driving classes; but these are cognate to agriculture, and horse-breeding of every kind should be fostered by agricultural societies.

As concerns other exhibitions in the country, some of the older ones are accompanied by a strong contingent of outside shows; but these are not admitted within the grounds, and are in no way controlled by those who manage the shows. In some districts, attempts have been made by agricultural societies to introduce military tournaments and displays, brass-band contests, trotting matches, and tugs-of-war (which last, in some localities, are extremely popular, parish teams trying conclusions with parish teams); but in the main, the respon-

hoof, and the dressed carcass of which sells for the highest price on the market, thus giving a profit to the feeder, to the packer, and to the consumer. A steer well selected from this point of view may be said, without stretching it, to be half fed. If a mistake is made here, no great profit is possible, however skillful may be the feeding or well selected the food.

The raw material must be such as will yield the product desired. The object in view in finishing the steer is not only to produce gain in weight, but to increase quality; in other words, to interlard the muscles with fat which sells for the price of muscle instead of the price of fat, a difference of from one to ten cents per pound. This raw material must be as digestible as possible. In all cases it requires a large percentage of the feed to run the machine—that is, to supply the heat and repair the waste of tissue which is constantly going on in all animals. The colder the weather and the greater the amount of exercise, the greater the waste, and the more that we call "food of support" is required. The gain made in all cases is that which the animal is able to consume, digest and assimilate over and above the food of support or that which is necessary to run the machine.

The appetite of the steer is to the steer feeder what the pulse of a patient is to the doctor, an evidence of what is going on inside. If everything is going on right, the steer has a good appetite and eats his food with a relish which seems to say "Yum yum" all the time, a contentment, peace, comfort and satisfaction that it does a man good to see, and when the steer goes off he seems to say: "I have dined."

To keep the machinery running to the fullest capacity for six months in succession, in wet weather and dry, in hot weather and cold, bringing

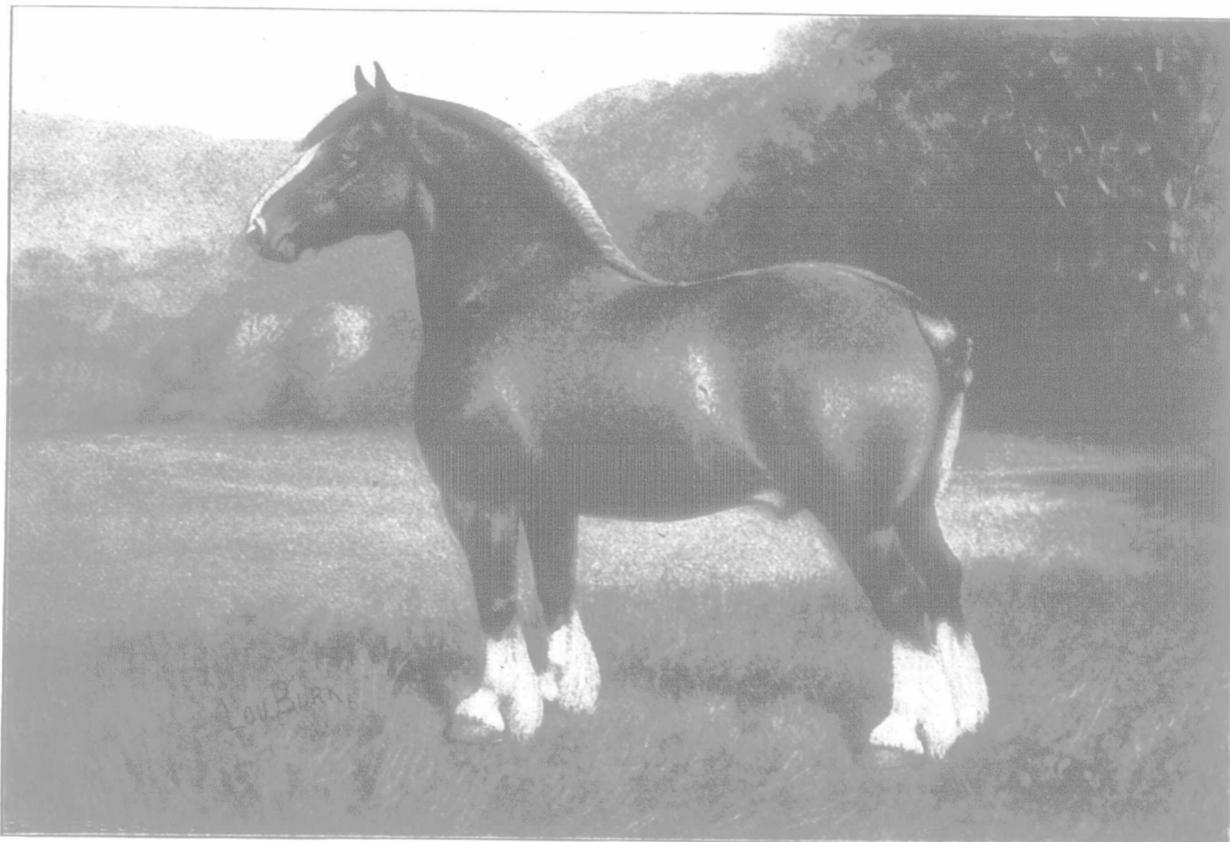
the steers to the trough with the feeling that they could eat up the corn crib, and leaving it when they feel that they could eat just the fraction of a grain more, is the highest art and skill of the cattle feeder, and to do this he needs a clear head and a steady hand. He requires to know when he looks at the clouds in the morning, how much the steers will eat that day, how much more he can give them with safety, or how much less. Comparatively few men are equal to this; none can be equal to it without the expenditure of a good deal of gray matter of their own brains and habits of very close observation. They wish to run this machine to the fullest capacity, to feed into it as much as possible in excess of the food of support without deranging the very intricate and complicated machinery that is running under the hide, unseen to mortal eyes until the steer gives up the ghost.

One day's overfeeding, the result of not closely observing the weather, may put the complicated machinery out of order, and it will take days to get it to working right again without heavy loss and expenditure of food.

No man runs any sort of machine up to its full capacity at first. Just here it is easy to make a very serious mistake. When the steer is first put on feed he will eat ravenously, and if no mistake is made in quantity he may make heavy gains for the first month or two because his capacity to digest and assimilate is vigorous and as yet unimpaired. It is no trick at all to make good big gains the first month, or even the first two or three months. The highest skill in cattle feeding is seen when the steers make among their heaviest gains on the last month's feed.

All changes of feed should be made as gradual as possible, so gradually that the digestive apparatus system, or, in other words, the machinery, will never know that the change is being made. The changes from grass to green corn, from green corn to snap corn, from snap corn to ear corn, from ear corn to shelled corn, or to corn and oil meal, or to corn and gluten meal, should be made so gradually that no shock is given to the complicated and delicate apparatus, which gives signs of being out of order, first, by the failure of appetite, and second, by that feeling which you have had, reader, when you have eaten three turkey dinners in succession, with plum pudding, pumpkin pie, and an assortment of cakes and jams, and preserves added as dessert. You feel as if you did not want anybody to say "turkey" to you for the next six months. —Wallace's Farmer.

The world's trotting record is now held by The Abbott, a gelding, time 2.03.



PREMIER PRINCE (10248) 9190.

Clydesdale stallion, imported in 1892.

OWNED BY ALEX. GALBRAITH, JANESVILLE, WISCONSIN.

sible agricultural societies, which are really exerting an influence for good in their own sphere, find that it pays best to make an agricultural show as consistent with its own objects as possible. The experience of agricultural societies here is, I should say, generally favorable to the efforts of those who, in Canada or elsewhere, are anxious to bring the agricultural element to the front, and to make it the prominent feature in shows and fairs.

"SCOTLAND YET."

The Problem of Steer Feeding.

To grow a calf properly on skim milk is one of the most difficult problems of the farm; to finish the steer—that is, to feed it properly for the last six months—is one of scarcely less difficulty. The man who can solve the first problem can easily solve the second; the man who can solve the second cannot always solve the first. What, then, is the problem? To secure with a given amount and kind of feed the greatest possible gain in live weight, together with the greatest possible improvement in the quality of the carcass. Looking at it from one point of view, the steer is a factory; the food, whether of grain, hay or grass, the raw material. The digestive system is the machinery in the factory, and the gain of live weight in the carcass or machine, the product.

The profit in feeding is determined largely by the selection of the cattle—that is, by selecting cattle that have that indefinable something called "quality" by reason of which the steer when finished sells for the highest market price on the

Paying for Milk According to Cheese Value.

The following extracts from a bulletin about to be issued by C. A. Murray, Dairy Superintendent of Manitoba, will be of interest to patrons of cheese factories, as well as makers and others interested:

To Test Cheese.—(1st) Obtain a representative sample of cheese by taking a plug extending from the outside well to the center of the cheese, cut this into small strips extending from end to end of the plug, strips that will easily pass through the neck of the bottle; cream bottles are best. Weigh out from four to five grams, and put into test bottle, and to this add 12 to 15 c. c. of hot water to dissolve the cheese. After shaking the bottle sufficiently to dissolve the cheese, cool the sample down and add 17.5 c. c. or the usual amount of acid, and proceed as in the testing of milk. (2nd) To obtain the percentage of fat in the cheese, multiply the reading by 18 and divide by the number of grams taken in the test.

Payments of Milk According to its Butter or Cheese Value.—While, in creameries, payment according to quality is always made in proportion to the amount of fat furnished by each patron, in cheese factories two different methods exist: 1st, according to the amount of fat in the milk; 2nd, by taking into consideration the casein as well as the fat of the milk. As the percentage of casein in milk is fairly constant, some constant number, usually 2, is added to the percentage of fat as an allowance for the casein. Extended experiments all go to prove that the second is the preferable method to adopt in cheese factories.

Division of money by the casein and fat methods:

A	sends	3,462	pounds of milk, testing	3.1	fat.
B	"	5,220	" " "	"	3.6 "
C	"	8,371	" " "	"	4.0 "

Total... 17,053 pounds.

From the above milk is made 1,650 pounds of cheese. The cheese sells for 9½ cts. a pound, and it costs 1½ cts. per pound to manufacture it; therefore, the net value of a pound of cheese—9½ cts., less 1½ cts., equals 8½ cts.; 1,650 pounds, at 8½ cts. a pound, amounts to \$140.25. There are 971 pounds of fat and casein, worth \$140.25; hence, one pound is worth 14.44 cents.

To make a division of money according to the second, or fat-casein method, taking 2 to represent the percentage of casein in the milk, suppose, during a certain month, three patrons supply milk to a factory as follows:

Lbs. Milk.	Per Cent. of Fat.	Per Cent. of Fat and Casein.	Total Fat and Casein.	Value at 14.44
A 3,462	3.1+2	5.1	176.5	\$25.48
B 5,220	3.6+2	5.6	292.3	42.30
C 8,371	4.0+2	6.0	502.2	72.51
T'ls 17,053			971.0	\$140.19

Rule to find the yield of green cheese from 100 pounds of milk: Divide lactometer reading by 1, add two-tenths of the per cent. of fat, divide total solids by 3, add 91 per cent. of fat, multiply total by 1.58; equals 1.58 for cheese containing 37% of water.

Example:

Lactometer reading, 30	Percentage of fat, 3.0
30 ÷ 1 = 30	
3.0 ÷ 2 = .60	
.91 ÷ 3 = 2.73	
2.73 + .6 = 3.33	
3.33 ÷ 3 = 1.11	
1.11 + 2.73 = 3.84	
3.84 × 1.58 = 6.07	

Percentage of water in cheese: The uncertain element in the formula lies in the factor, 1.58, which is shown above, and is based on an average water content of 37 per cent. in the green cheese. This may, however, be changed to suit any particular case—e. g., 35 (1.51), 40 (1.67), etc.

Prairie Wolves Taking the Turkeys.

To the Editor FARMER'S ADVOCATE:

I would like to emphasize what your correspondent in Oct. 5th issue says re depredations of wolves on turkeys. This year I raised eighty turkeys, and they have been reduced by wolves to forty at present, and are daily disappearing. They come within a few yards of the door, and that in a thickly populated district, a mile south of Virden. A neighbor about a mile distant has also suffered greatly. The bounty should by all means be raised if that will destroy the pests, else turkey-raising will have to be abandoned. A SUBSCRIBER.

[When at Indian Head, a short time since, we saw a small flock of magnificent Bronze turkeys. Some of the young ones were wearing small sheep bells, which the owner said had so far proved a defence against the coyotes. He had lost several of his old birds that had strayed away or were on nests and without bells. It is not likely that the bounty will be again raised, so we may as well try to get over the difficulty some other way. Has anyone found any remedy?—ED. F. A.]

Mr. Fred Dean, buttermaker at the St. Mary's (Ontario) Creamery, writes *Dairy Producer*: "We have had an extraordinarily good season, both in prices and quality, this year, while the quality of the Canadian butter is surpassing even that of the Dunes, and which we feel very proud of. We still pasteurize all of our cream and cool by artificial refrigeration the year around, which we find is a great deal cheaper and gives far better satisfaction than the old system of using ice and not pasteurizing. I also think that we never will be successful in having an A1 quality unless we use a first-class starter every season in the year."

Fall Wheat in Alberta.

SOUTHERN ALBERTA.

In a recent issue reference was made to the growing of fall wheat in Southern Alberta. We have to hand a communication from Mr. Kettles, of that district, who has been experimenting in farming for a number of years on a small acreage—some 35 acres—to which he has been able to give thorough cultivation:

"The land I have been working is high, rolling bench land; a heavy wheat soil. I have grown ten crops of fall wheat and had but one failure, on account of sowing too late (September). I could not say the amount of manure used per acre, but it was heavy, and I find that the richest land in the Territories is improved by manuring and cultivation. Manure should always be piled and rotted before applying, if for nothing else than to kill foul seeds. I have sold during the past season alone over 600 bushels for seed."

FROM NORTHERN ALBERTA.

To the Editor FARMER'S ADVOCATE:

Your inquiries re fall wheat to hand. I have very little to say in reply, as I only came to Alberta in the spring of 1880. When I saw how the season opened and the ground dried on the surface, I could see no reason why fall wheat would not grow here. I therefore sent to an old neighbor in Ontario for some seed, and got three pounds by mail. I sowed some on August 25th and some on September 3rd. The latest sowing did not grow so much straw as the earlier, but stood up better and ripened as soon. I sowed in drills, and gave it no more cultivation than would be given a hundred-acre field. There was, however, a poplar grove or bluff that gave it more protection from winds than the average field would have. The Dawson's Golden Chaff is the variety I had. I cannot give the yield. Mr. William Sharman bought the whole crop in the straw for the C.P.R. Land Department. There were a good many men looking at it, and the lowest estimate I heard anyone make was 60 bushels per acre. I harvested it on the 8th of August. The soil is black loam or clay, with a hard clay subsoil. I used no manure, and don't know how long that particular piece of land had been previously cropped. It had been brush land originally. I think fall wheat will do as well here as in Ontario. I would risk Ontario seed every time, but the farther north in Ontario it was grown the better. On the 24th of May I measured one of the strongest plants I could find. It was 30 inches high. On the 2nd of July I measured again. It was six feet; a growth of 42 inches in 39 days. I don't think there was one plant winter-killed. I have sown a little this year, on the 29th of September, and if you wish will let you know how it comes through the winter.

J. W. SUDDABY.

[We shall be glad to hear further reports from Mr. Suddaby or from others who have experience to relate regarding the growing of fall wheat in Alberta.]

Preserving Farm Machinery.

A few years ago the writer had occasion to purchase a binder, and finding a second-hand machine in good repair, offered cheaply, purchased it. Afterwards, it was learned that the machine had cut no less than ten harvests, which would in many cases have quite worn it out, but this machine was in good condition and still does good work. To be sure, the machine was a good one to commence with, but the secret of its continuing good was largely owing to the fact that it had not only been kept well oiled and the parts tightened when required, but it was never allowed to remain outside exposed to the elements after the cutting season was over. In this connection, it is surprising that so many farmers persist in shortening the term of usefulness of their machines and implements by leaving them out for months after their term of use for the season is over, and even all winter in many instances. In travelling about we find a very great difference in the practices of different localities in this respect. Where really good farming is the rule, we see very little evidence of carelessness in leaving machinery out over winter where it was used. Good farming goes hand-in-hand with a close study of what pays and does not pay, so that such glaring losses as come from needlessly exposing expensive machinery to the elements is religiously guarded against. It is hardly necessary to point out that the man who succeeds is he who keeps just a little ahead of his neighbor, instead of doing simply what someone else found to pay, to figure out personally what is best to do and what should be avoided. Without an implement shed, frequently a barn mow can be turned to good account, but even though a shed has to be built to protect the machinery, it will pay well in coin and satisfaction. We believe we are well within the mark when we say that the repair bills for ten years of those who systematically protect their machines and implements will not exceed half those of their more careless neighbors, and they will have the satisfaction, too, that the machines and implements will run better and do better work than will those that have been neglected.

Vigilance the Price of Eggs.

BROWN LEGHORNS THE FAVORITES.

I have been keeping a few fowls for a number of years. I find that one must be with them much of the time to make them do their best. Watch and work are the two great essentials of success. Watch them, and if one seems sick or does not lay, try and find out the cause. My chickens are all tame, so I can catch them any time. If one gets sick, I pick it up and examine it thoroughly to see if it is hurt in any way externally. If not, I keep it separate from the rest of the flock for a few days and doctor it. If it is in the winter, it may be chilled, and if so, a good feed for it is some warm bread and milk, with a little cayenne pepper. I have various remedies for different diseases. Then you will have to work, work, work, to keep their house clean. I think that it is a woman's place to look after the poultry on a farm, but if she is not fond of fowls she may as well leave it to the men, because the chickens know just the minute you step your foot in their house whether you are a friend or an enemy. One reason I say that it is a woman's work, is that she is gentler to move around than the average man, and if she loves them she will notice their every want much quicker than a man. My husband says my flock of fowls all look alike to him. Now, no two are the same to me. If I had them all named, I could tell each one by the difference in their combs or some certain peculiar action of each one. If I just step to their door and speak they all run to me; but you let a stranger go there, and they will run away every time.

I was speaking of keeping their house clean. It should be cleaned every day, but twice a week will do at this time of the year. Give them fresh litter and throw the grain on it for them to scratch for. It gives them exercise and helps to make eggs when fowls are confined. If you love your fowls, you will be thinking of some surprise for them in the way of feed. Hang up a cabbage about two feet from the floor, in the center of the room, and they will jump and grab for a mouthful, as they are fond of it. Also have a sheaf of oats, wheat or barley, suspended on a pole, about the same distance from the floor; they will pick out every kernel. Cook vegetables of all kinds for them twice a week. They are fond of onions and the odor that penetrates through the skin is said to drive lice away. Give them meat three times a week if you can get it for them.

I have a dust box by the window so the sun shines in it. How they enjoy a good dust bath in the winter. I have another box with gravel, lime and charcoal in it. It is surprising how soon it gets empty. After I have cleaned their house out, and refilled the nests, given them fresh straw, and they come in and see it, they mutter away their thanks, and pay me in a full egg basket at the end of the week.

I have 26 thoroughbred Brown Leghorns. I started with only eight, but increased the flock, as I could look after more and have plenty of room. For weeks at a time they would every one lay every day. They have never wanted to sit once. The flock has laid winter and summer all the time, only at the moulting period. Then I would rather they did not, as a hen cannot manufacture eggs and feathers at the same time; if they do, they are too weak to go on laying all winter. Feed them well while they are losing their feathers. Do not think because they do not lay, you will not bother to feed them. That is a mistake. I would not keep any other breed of poultry. The Brown Leghorns are the fowls for eggs. How much nicer it looks to see a flock all one color than to see every kind all mixed up. FARMER'S WIFE.

Norfolk Co., Ont.

Institute Meetings.

A series of Institute meetings will be held in November, under the provisions of the amended act, providing that all agricultural societies shall hold several Institute meetings during the year.

A. G. Gilbert, Poultry Manager of the Central Experimental Farm, Ottawa, and Chief Clerk McKellar, will address meetings at the following places:

Neepawa	November 12th, at 2 p.m.
Portage la Prairie	" 13th, " 7 "
Carberry	" 14th, " 2 "
Brandon	" 15th, " 2 "
Souris	" 16th, " 2 "
Winnipeg	" 17th, " 8 "
Emerson	" 19th, " 7 "
Morris	" 20th, " 2 "
Morden	" 21st, " 2 "
Manitou	" 22nd, " 2 "
Pilot Mound	" 23rd, " 2 "
Crystal City	" 24th, " 7 "

Weed Inspector R. G. O'Maley and F. Lutley, of the Dairy School staff, will also address a series of meetings, dates of which are not available at this writing.

The London Dairy Show.

In the milking test at the London (England) Dairy Show last month an unregistered Shorthorn cow, 33 days in milk, gave 73 lbs. milk in the one-day test, and made 2 lbs. 10½ ozs. butter, ratio 1 lb. milk to 1 lb. butter, 42.56, the highest record in the show by a cow of any breed. The first-prize registered Shorthorn cow, E. Day's Cherry, 104 days in milk, gave 55 lbs. 2 ozs. milk, and 2 lbs. 5½ ozs. butter, ratio 33.83. The highest yield of butter by a Jersey cow was 2 lbs. 2½ ozs. from 29 lbs. milk, 157 days in milk, ratio 43.81. The first-prize Guernsey cow gave 31 lbs. milk, 117 days in milk, 1 lb. 8½ ozs. butter, ratio 29.01.

Advantages of Fall Calves.

In bygone times, when, as a rule, the milking term of cows covered only about one half the year, and they were generally wintered at the straw-stack or in open sheds, it was considered economy to breed them to produce their calves in the spring months, the fresh grass serving to restore lost condition and furnish a fair supply of milk, at least while pasturage continued good; the calves being raised on grass and on the skim milk from the dairy. Since good stabling has become more general, and dairying a specialty with a large proportion of farmers in some districts, and the winter market for butter and cheese the best of the year, the practice of having the cows come in fresh in the fall has extended until it is general not only in the case of dairy farms, but also of those devoted more to the raising of beef cattle, and of general mixed husbandry. The dairy cow coming in fresh in the fall, if well fed, as she should be to make her do her best work, will milk well through the winter, while her product brings the highest price, and will flush up in her milk when turned out to pasture in the spring, thus lengthening the term of profitable lactation, and will make a better showing from her year's work than if she had calved in the spring. The calves coming in the fall soon learn to feed and are readily attended to while the other stock is being fed, and are ready to go out to grass and find for themselves when the spring work on the farm is to be attended to, and the least stock feeding to be done suits the farmer best. Heifers born from September to November may be bred at about 16 to 17 months old, to produce their first calves at a little over two years of age, coming due also in the fall months, when they may and should be fed liberally, and thus given a good start as milk producers. If bred for their second calves in February or March, they will have the benefit of a long milking term, which will serve to establish the habit of persistent milking, and their second calves will also come in a good season. The advantage of having calves come in the fall is quite as apparent if they are male calves. If they are kept entire for breeding purposes, the young bulls will be at an age of from 15 to 16 months before they need be put to service, which is decidedly preferable to using them at an earlier age; while if they are turned into steers they will be just the best age to go off as butcher's beasts or export cattle in the spring, after they are two years old, or at an age of about two and a half years, which is probably the most profitable age at which to market cattle that have been kept growing and improving from their birth.

These remarks apply equally to dairy cattle and to the pure-bred beef breeds and their grades, and the principle is, we believe, generally acknowledged to be sound, as it is commonly practiced by the most successful handlers of cattle of either class.

Scalded vs. Raw Corn Meal.

We find there still exists among farmers a marked difference of opinion regarding the value of scalding ground grain for hog-feeding. It is natural to suppose that warm softened feed would tax the energy of a hog less to digest than cold raw food. As a matter of fact, it is not a serious undertaking to feed a few lots in different ways, studying always to reduce the cost of feeding in substance and in labor.

The Agricultural Department of Nottingham University College, England, undertook to learn the difference between feeding corn meal scalded and unscalded. The experiment is described in the Journal of the Board of Agriculture. Twelve pigs of the Yorkshire breed, all of one litter, were selected for the first experiment, and these were divided into two lots of six each. They were 19 weeks old when the test started, and the difference in the total weights of the two sets was only 16 pounds. Each lot received the same quantities of corn meal and whey, the only difference being that lot I. received the corn meal raw, and for lot II. the meal was scalded. The pigs were housed in similar pens, each having similar yards. They were fed alike at 7 a.m. and 4 p.m. Previous to feeding, the pigs were shut away from the troughs, and in the case of lot I. whey was put into the trough and dry raw corn meal put on the surface of the whey, while lot II. received the same quantity of corn meal scalded and mixed with the whey in the trough. The pigs were given access to their respective troughs at the same time.

The experiment lasted from Sept. 1st to Dec. 9th, when the pigs were slaughtered. Both lots were weighed at the end of the experiment and at periods of about a fortnight throughout the trial. On Sept. 1st, lot I. weighed 606 pounds and lot II. 680. At the conclusion of the experiment lot I. weighed 1,021 pounds and lot II. 1,516 pounds, so that the pigs fed on raw meal gained in live weight 80 pounds more than those fed on scalded meal. When the pigs were killed the dressed weights of lot I. was 1,200 pounds, and of lot II., 1,163, an advantage

in favor of lot II. of 3.9 per cent. carcass to live weight. Both lots were equally good, and each sold for about \$10.25 per cwt., leaving a difference of \$1.00 in favor of lot I. fed on raw corn meal. After deducting \$1.25, the value of the 16 pounds extra weight, from lot I., we have a cash balance of \$2.75 in favor of feeding pigs on raw meal. To this may also be added the fuel and extra labor involved in scalding the meal, so that, according to this experiment, to scald corn chop for hogs is worse than useless. We would be glad to hear from any of our readers who have conducted stock-feeding tests along this or other lines.

Deterioration of Beef Cattle.

The *Iowa Homestead*, in a recent issue, has the following: "There is complaint in Canada that the quality of the beef cattle there is declining, and that Canada beef occupies second place in the markets of Great Britain as compared with the product of the United States. We have heard very similar complaints made on this side of the line, and it is undoubtedly true that in the last fifteen years fewer good cattle have been grown upon the farms of the middle West than formerly. Here a good deal of investigation has been directed to ascertain the cause or causes of the decline, and the reasons therefor have been pretty well ascertained and repeatedly given in these columns. The FARMER'S ADVOCATE, of London, Ont., undertakes, in its current issue, to state the causes of the deterioration of the Canada steer. One of the reasons assigned is the growing custom of using immature bulls exclusively, a practice which, it is declared, is increasing the difficulty of securing first-class feeders. Yearling bulls are bought and put into service at once, with the result that the progeny are poor

weight stock for the English market is a thing of the past, and the bullock which they will accept over there now weighs not more than 1,300 or 1,400 pounds. The Canadian stock has fallen off greatly in quality, and the grades are nothing like as good as they were fifteen or twenty years ago. The stock-raisers must pay greater attention to breeding if they want to make any headway.

Mr. Thompson said that it would be necessary for the farmers to be educated into producing export cattle all the year around, to make the refrigerator system a thorough success. Otherwise the dealer would be able to secure stock for export only a portion of the year.

"The Argentine," he said, "will become the great stock-raising and farming country of the continent. The natural advantages of the country are wonderful. The stock breeders have grass the year around, there being four crops a year, three of them being heavily seeded. The ranches are very extensive, the breeder who has only 6,000 or 7,000 acres being regarded as a small man. Fully 60 per cent. of the stock raised on them are a good export type of cattle. Sheep are not raised by thousands, but by millions. There are three establishments which kill 100,000 sheep a week.

"The Argentine is now a great competitor against this country in butter and cheese. Hundreds of tons of fresh butter, prepared in six or eight pound packages, are sent over annually in refrigerated chambers and sold in Great Britain as English butter. As a matter of fact, I have never tasted English butter to equal it. The cheese industry, too, is increasing, but it has not received the attention given to the butter trade.

Constructing an Ice House.

It is a good thing to do things thoroughly, and so we will describe such a house as may be satisfactory in every way. Set up posts in the ground in a dry location, and board them on each side with double boards. Fill the space (ten inches is enough) with sawdust up to the roof, and cover it with a tight roof. It is best not to have a door, but steps up outside to get into it at a gable to take out the ice. It is well to have a door through which the ice may be packed in, however. Cut the ice into even shaped blocks of such a size that two one way may be covered by three the other way. The idea is to make a solid block of ice, which may have all the cracks filled by sweeping the dust of ice made in the packing into the cracks, so the whole mass will freeze solidly together. Blocks 16x24 inches, or 12x8 inches, will pack in this way. Cut the ice soon after it is six or eight inches thick; it is easier to handle and cut it then, and it will be solid anyhow, for it is another strange habit of ice to freeze together, if only brought into contact for a moment. This is called regelation.

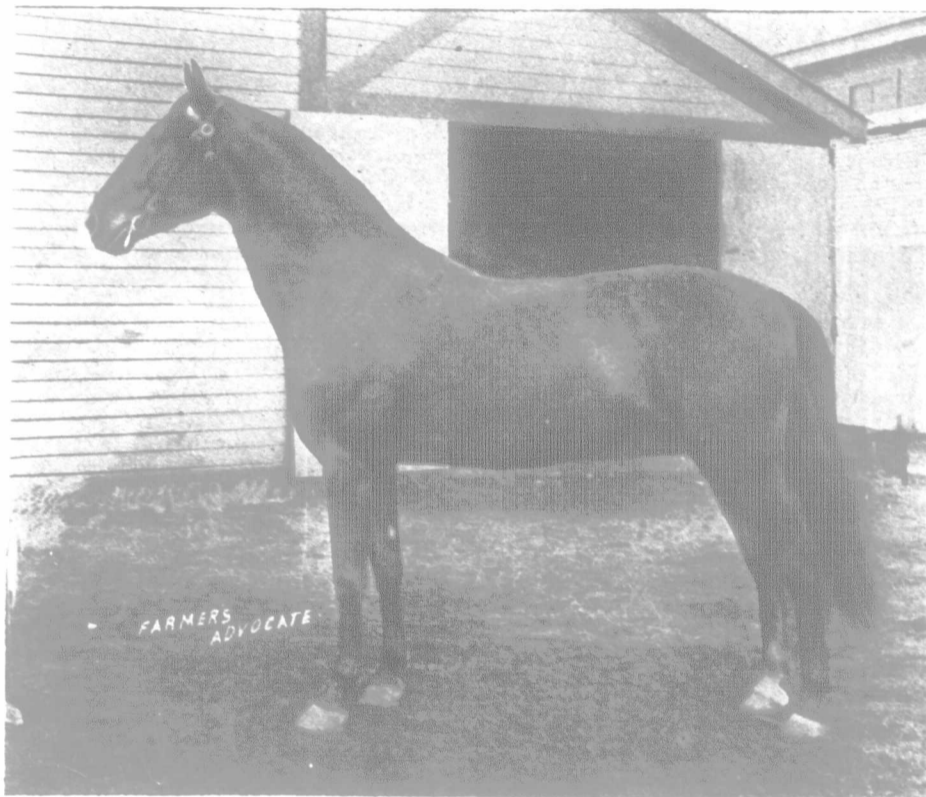
An efficient ice house may be built for a few dollars, but if one wish an ornamental one with a cupola and a weathercock on the top, it is all the same, \$1,000 will not make a house keep ice unless these simple rules are perfectly carried out, and \$20 will, if they are. It may be repeated, perhaps with advantage, that the primary rules are these: Cut the ice on a dry, cold day. Cut it into the right shaped blocks to make a solid mass.

Have a dry floor on the ground. Have no places for air to get in under it. Put a foot of dry packing under the ice. Pack the ice solid. Have sufficient packing around and over the ice to keep air from it. Have plenty of covering on the top, with ample ventilation: let air blow in freely, but do not let sunshine in, and keep the top covering dry. All the rest may be as you please. *Dairy Produce.*

A School of Practical Farming.

There has been established at Briercliff Manor, twenty-seven miles out of New York City, a school of agriculture, the object of which is the practical training of men and women in correct methods of agriculture, horticulture, floriculture, gardening, poultry-keeping and allied branches. The aim will be to raise the standard of agricultural methods and to demonstrate through practical instruction, rather than the study of the natural sciences, the higher value that may be obtained from land under more intelligent management; to overcome and not to be overcome by the many difficulties that beset agriculture; to teach how to produce purer and better food, for which there is constant and unsatisfied demand. An interesting feature is that the usual literary features of an agricultural college are to be omitted. The director of the school is Mr. George T. Powell, the noted horticulturist, formerly of Ghent, N. Y.

If every reader of the FARMER'S ADVOCATE who regards it as good value for the price would secure one new subscriber, its field of usefulness would be doubled.



ROYAL MORGAN 15862 (formerly Actor).

Standard-bred stallion, sired by Royal Farnaught, the sire of twenty-five in 2,30 list. Won second prize at London, 1900.

OWNED BY W. K. NEWTON, SALFORD, ONT.

the first year and that the devitalizing effects of the first year's service injure him for the second and third years' demands. The second cause which plays a conspicuous part in producing the evil mentioned is the progress that has been made by the dairy industry, which has been attended by the introduction of bulls of the dairy breeds. The cheap scrub is also a chief offender, and where so many calves are bred for, merely for the sake of having cows come in fresh, there is a good deal of indifference about whether the calf lives or dies, and it is consequently greatly neglected during the period when special care should be taken to make it profitable. The causes named have all operated in this country. Immature bulls have had their share in reducing the quality and feeding capacity of the get, dairy bulls have contributed in the same direction, but the greatest blunder of all is the scrub. In the introduction of dairy blood there is compensation in improved milking quality, but for the use of the scrub there is no excuse whatever."

Mr. A. J. Thompson, a Canadian cattle dealer who went to the Argentine Republic three years ago and recently returned, stated when interviewed in Toronto that "the farmers of Canada are away behind in feeding cattle."

They might as well get the Chicago prices of 5½ to 6 cents, instead of 4½, for their stock. The Canadian steer is not finished. It is a big, rangy animal, badly fattened, which in England dresses about fifty pounds to the hundredweight, while the smaller, compact American bullock dresses fifty-seven per cent., is better fleshed, and is worth 2d. to 1d. a stone more in England than the Canadian bullock. The American breeder matures his animal young, and it is small and well-fleshed. The heavy-

British Columbia Provincial Exhibition.

The Royal Agricultural and Industrial Society of British Columbia held their annual exhibition at New Westminster, Oct. 2nd to 6th, inclusive.

Fine weather prevailed throughout, with the exception of a few hours on the 5th, and the attendance was by far the largest on record, over 11,000 persons passing the turnstiles on the banner day (Thursday).

The exhibition was under the management of Mr. W. H. Keary, who may fairly be congratulated on organizing and carrying out the most successful exhibition ever held in the Province, and, in conjunction with the President, Mr. T. J. Trapp, and the board of directors, placing the Society in a sound financial position for future work. The exhibition was opened by the Hon. J. H. Turner, Minister of Finance and Agriculture, who, in his opening address, referred to the wonderful progress going on in agricultural development, and referred to the grand prospects for British Columbia farmers in particular, due to the splendid home market for all kinds of farm produce, on account of the development of the mining industry and consequent building up of new towns and cities. Mr. Turner emphasized the importance of individual effort amongst farmers, and promised the support of the Government to worthy agricultural enterprises.

The principal feature of the exhibition, beyond question, was the fine showing of Shorthorn cattle, due chiefly to the enterprise of two large breeders from Oregon—C. E. Ladd, of the Oak Hill Stock Farm, North Yamhill, Oregon, and W. O. Minor, Mountain Valley Stock Farm, Heppner, Oregon. Herbert Wright, of Guelph, Ont., also contributed a car of fine young Shorthorn stock, which were sold to various breeders of the Province. Besides these, the Provincial Dairymen's Association had a car of dairy stock on exhibition and sale, purchased for them in Ontario by Mr. F. W. Hodson, Dominion Live Stock Commissioner, including Jerseys, Ayrshires, and Shorthorns. These were sold by auction during the exhibition, and it is noteworthy that while the Shorthorns and Ayrshires sold at a considerable advance on cost, Jerseys were slow sale at lower prices than the animals cost in Ontario. A few Berkshire and Yorkshire breeding pigs included with the cattle also sold well at an advance over cost to the Association. This, by the bye, was the first venture of the Association in stock importation, and will be repeated in the near future.

The competition for the agricultural district prizes for collections of fruits, grains, grasses, roots, etc., was small, as compared with the preceding year, although the Kelowna Agricultural Association made an exceptionally fine display of the products of Mission Valley in all the above-mentioned lines, including also hops, evaporated fruits, and tobacco (raw and manufactured), winning easily 1st premium. Other districts competing were Kamloops and Agassiz.

Stock judging was in the hands of Messrs. Jas. Bray, of Portage la Prairie, and J. B. Jickling, of Winnipeg. Their decisions were generally acceptable, and it is pleasing to add that the judges took occasion to publicly compliment exhibitors and officials on the straightforward manner in which the show was conducted, stating that it was worthy of remark that not the slightest attempt had been made to prejudice their judgment in any way.

CATTLE.

Shorthorns were a grand class, and although most of the prizes offered went to Oregon exhibitors, a most valuable object lesson was furnished to Provincial stockmen, both in quality of stock and as to fitting animals for show purposes. Mr. C. E. Ladd exhibited all together fifteen head, with Topman 17847 at the head of the herd. This bull was bred by the Russells, of Richmond Hill, Ont., and exhibited by Capt. Robson at Toronto last year, winning the championship there, and since coming to the Pacific Coast has been a noted prizewinner. He headed the class for aged bulls and for best herd of one bull and four females over one year. Mr. Minor's herd was headed by the 2-year-old, Strathallan Chief, bred by W. C. Edwards & Co., Rockland, Ont.; but probably the finest animals in it were the magnificent cows, Sallie Girl and Lovely of the Valley, almost perfect specimens of the breed, and in beautiful condition. All together, eighteen head of stock were shown by this exhibitor, and the prizes were about equally distributed between this and the first-mentioned herds: Minor winning the 1st for four animals the get of one bull, with home competition left out in the cold. It is satisfactory to note that two promising young animals from the above were purchased for the Patterson Ranch at Ladner's Landing.

Holsteins were a strong class, but, as a rule, in anything but show condition. W. P. Newlands, Eburne, showed fourteen head, taking 1st for aged bull with a fine rangy animal imported from Oxford Co., Ont. H. F. Page, Mission, carried off the herd prizes for bull and four females over one year and for bull with four of his get. His young stock were of good size and quality, and two cows, Aggie Clothilde and Matsqui Princess, were particularly strong in udder development.

Jerseys were not nearly so well represented as in the last three preceding years, so far as numbers were concerned; individual specimens of the breed, however, would be hard to beat anywhere. Shannon Bros., Cloverdale, were to the fore with Hammer's Stoke Pogis in the aged bull class, beating last year's prizewinner, Liverpool Boy, shown by A. J.

Street. The last-named, however, carried off both herd prizes, showing excellent young stock and the noted cows, Essie Gay and Wanda S. Mr. Roy Pearson took 1st prize for aged cows, deservedly, with a fine animal purchased some two or three years since out of the Street herd. She was in splendid condition, with remarkably good udder development, a credit to both owner and breeder.

In *Ayrshires*, the honors were divided between Messrs. A. C. Wells & Son, Chilliwack, and Jas. McCulloch; both showed excellent herds, in good condition, the last-named winning the herd prize for bull and four females.

Red Polled cattle were shown by J. T. Maynard, of Chilliwack, and from the Cogswell herd, Washington. These cattle handled well; were smooth and even, and had good dairy points as well, coming very near, indeed, to that long-looked-for general purpose stock. The bull, George Washington II., headed the Maynard herd, and traces back to noted prizewinners in Norfolk, Eng.

Polled Angus stock were shown by Mr. Alex. Ewen, New Westminster, with a good, well-proportioned bull, Pond Bob II., at the head of the herd; all of which were in good healthy condition, though not specially fitted.

In *Herefords*, honors were divided between the Kirkland Estate herd, Westham Island, and Messrs. Merryfield, Mt. Lehman; both showing heavy typical specimens of the breed.

Guernseys were decidedly weak, although J. W. Beebe, Agassiz, showed some stock with good udder development, but very poorly fitted.

As usual, some excellent milch cows were shown in the class for graded stock, 1st honors going to Mr. W. P. Newlands.

HORSES.

The show of horses was very much better than that of previous years, especially so in the heavy breeds. The Victoria Truck & Dray Co. carried off the honors in Clydes with an excellent bunch of eight animals, covering most classes; a fine black stallion, Newman, standing at their head. This lot also included the handsome mare, Loretta, with foal at foot; and, owing to their fine condition all through, showed to great advantage. Considerable credit is due to Mr. Jas. Bryce, manager for the Company.

In *Shire Horses*, J. W. Hollinshead, Ladner, showed a good-looking stallion, having plenty of bone, with good action; and J. A. Morrison, Mt. Lehman, showed a rather promising mare; in other respects, the class was rather poorly filled.

In *Suffolk Punches*, J. M. Steves, Steveston, was again to the fore with a nice string of animals, which would have shown to much better advantage if better prepared.

Percherons were a strong class; 1st for stallion going to J. A. Morrison, Mt. Lehman, for a nice, active black-blocky, but fine. H. F. Page was a large exhibitor in this class, winning a number of prizes for young stock.

The *Roadster* classes were numerous represented, and included some excellent animals. J. W. Hollinshead showed a good string, of all ages; also F. Steves and J. T. Wilkinson. In the classes for Thoroughbreds and Standard-breds, J. Richardson, of Hastings, and J. T. Wilkinson were principal prizewinners; the first-mentioned showing King Patchen and eight of his get, all good. In the Wilkinson string were Colloquy and the two imported mares, Seabird and Red Girl, with a number of good-looking youngsters. M. S. Rose, of Vancouver, exhibited a couple of pacers, Primero and Carrie S. Notes on horseflesh would be incomplete without mentioning a nice, young, matched team of Clyde fillies shown by W. E. Butler, of Ingersoll, Ont., both the get of the good horse, Self Esteem, of Whiteside Farm, Innerkip.

SHEEP.

The sheep exhibit was largely in excess of any previous year, and embraced a number of very superior animals, especially in Southdowns and Shropshires. Here, again, outside competition has set a higher mark to be aimed at.

In *Leicesters*, G. W. Beebe, Agassiz; W. R. Austin, Sapperton, and H. Wright, Guelph, were exhibitors, the prizes being distributed between them, the flock prize going to Austin.

Cotswolds were shown by C. E. Ladd, Oregon, and J. Richardson, Provost Island, the Oregon flock winning the bulk of prizes.

In *Southdowns*, C. E. Ladd, Oregon, carried off many honors, including 1st for pen of ram and five ewes. J. T. Wilkinson was a keen competitor, and an extra good shearing ram was shown by H. Kipp & Son, Chilliwack.

Oxford Downs were also good. Shannon Bros., Cloverdale, showed a number of typical specimens, including the fine ram, Brant King Lingley II. J. Richardson, Provost Island, also showed strongly, and honors were well divided, Shannon Bros. winning 1st for 2-year-old ram, yearling ewes, ewe lambs, and pen of one ram and four ewes, and the three special prizes offered by the American Oxford Down Record Association. Richardson won 1st in all other sections of the class.

In *Shropshires*, C. E. Ladd showed some remarkably good, level sheep, in the pink of condition. E. A. Kipp, Chilliwack, had a nice lot, headed by a very heavy ram of English blood, going 210 lbs., which secured 1st in the class for two shears and over. The pen prize also went to this exhibitor.

Lincolns were well represented from the flock of A. C. Wells & Son, Chilliwack; fine, level sheep, with excellent wool and quality.

Dorset Horns were shown by J. T. Maynard, and *Suffolks* by J. W. Richardson; but the classes were poorly filled.

SWINE.

A capital all-round showing. In *Berkshires*, Shannon Bros. were strong in all classes, winning a majority of prizes.

Poland-Chinas were worthily represented from the Banford herd, but competition was easy.

In *Chester Whites*, honors were pretty well divided between W. R. Austin, Sapperton, and J. Thompson, Sardis.

In *Yorkshires*, competition was lively between H. F. Page and J. Brannock, Chilliwack, the former winning out in most classes.

Tamworths were few in number, although J. W. Beebe, Agassiz, showed fine specimens, light in bone, and very symmetrical.

DAIRY PRODUCE.

Every year shows progress in the quality of the butter shown; this was clearly evidenced this season, as all butter exhibits were carefully scored by Mr. Marker, of the Dominion Dairy Department, and there was great uniformity in the numerous exhibits. In the chief classes, 97 points out of a possible 100 were necessary to secure first prizes. The chief honors rested with the New Westminster creamery, with Cowichan creamery a close 2nd.

FIELD PRODUCE.

Grain exhibits, and indeed most classes in this section, were not up to the standard of previous years, owing chiefly to the destruction wrought by the plague of cutworms (*Peridroma saucia*) which prevailed in all districts of the Province during the growing season. However, the usual enormous squashes and pumpkins were on hand, and there was a fine all-round exhibit of potatoes—smooth, and not so much overgrown as to be useless for table purposes, a common fault some seasons.

FRUIT.

The exhibits in this section formed perhaps the most attractive feature of indoor exhibits, and were a revelation to visitors of the capabilities of the Province in this line. The display of winter apples was particularly fine, and included all the standard varieties, besides newer sorts, such as Salome, Jonathan, and Paragon, which are likely to prove valuable. A large percentage of the winning plates came from interior districts, notably Kamloops, Kelowna, Lytton, and Salmon Arm. The veteran fruit-grower, Thos. J. Earl, of Lytton, secured chief honors, winning, besides numerous prizes for single exhibits, the cup for best collection of winter apples, and special prize for collection of varieties. Other prominent prizetakers were: Mrs. W. Fortune, Kamloops; H. Kipp & Son, Chilliwack; J. Merryfield & Son, Mt. Lehman; and H. Chaplin, Kelowna. Special prizes were offered for packed fruit, pears, apples, and plums, and competition was very keen in these classes. In pears, a fine exhibit was made of fall and winter sorts. Plums were over, and not much in evidence; but Italian prunes, both fresh and evaporated, were shown in perfection.

A very prominent feature on the main floor was the large exhibit of fruits and field produce from the Dominion Experimental Farm at Agassiz. Apples and pears, in upwards of 400 named varieties, besides quinces, medlars, walnuts, chestnuts, and bottled fruits, made a remarkable collection. Besides these, over 200 varieties of grain, wheat, oats, barley and peas were on exhibition, classified and named, and as many varieties of potatoes. The whole was most tastefully arranged, and well-deserved credit was generally accorded to the Farm Superintendent, Mr. T. A. Sharpe.

MINERALS.

The exhibition of minerals of the Province was shown in a separate building, and while not so large as last season, was thoroughly representative of the enormous wealth of the Province in this direction. East and West Kootenays, Yale, Kamloops, Howe Sound, Pill Lake and Lillooet were all well represented; but perhaps the most interesting exhibit was from the comparatively new mining section of Mount Baker, partly on account of the great richness of the specimens, some of which assay upwards of a thousand dollars in gold to the ton of ore, and average much higher than in better known properties, but also on account of its being an unsettled question at present whether these claims are situate in Canada or the U. S. A., with a strong probability that they are in Canada, and immediately contiguous to the famous agricultural country of the Chilliwack Valley.

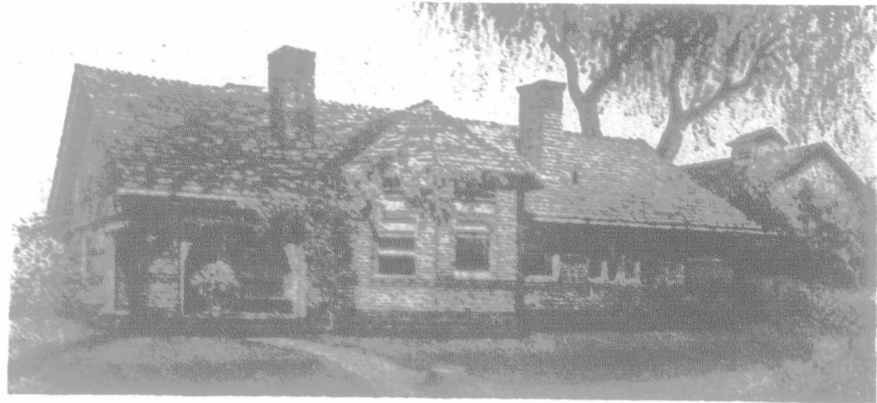
Simple Remedy for Cow-pox.

Take a portion of lard and mix with it common baking soda. Use all the soda the lard will take so as to leave the mixture of such a consistency that it can be applied to the affected parts. Often the remedy is not effective, because not enough soda is used. Apply soon as cow-pox appears, morning and night. Occasionally before applying the mixture, bathe affected parts with warm water, with a little carbolic acid in the water, using also castile soap so as to clean the parts, wipe dry and apply the mixture. Persevere in this treatment, and in a few days the trouble will subside. This has invariably been my experience. *John Rule, in Jersey Bulletin.*

A Modern One-Story Dwelling House.

Recent inquiries from readers indicate that there is a demand for modern farmhouse plans. From the standpoint of economical heating, perhaps the two-story house is most in favor, but viewing the matter from other considerations, the one-story house has its admirers. The plan we illustrate and describe is taken from *The Ladies' Home Journal*.

Breadth, simplicity and comfort—characteristics of farm life—are sought to be expressed in this one-story plan. The living-room is, as it should be, the



A COMPLETE ONE-STORY FARMHOUSE.

main feature of the plan. It is both living-room and dining-room, and contains a broad brick fireplace (built for wood or coal), a sideboard and china case of liberal size, with leaded glass doors above, as well as cupboard below.

A wide opening (closed by sliding doors) joins the living-room with the smaller apartment, which may serve as library, office, and parlor. Bookcases are built in, and there is room for a desk. Through a double-acting door we pass from living-room to kitchen, with its cooking conveniences and a table for the feeding of several extra hands. Over the cooking range is a low arch about six feet from the floor, which assists the ventilating register in the chimney to carry off quickly the steam and fumes of cooking. The sink is of enameled iron, with roll rim. The kitchen and bath-room walls are wainscoted with Portland cement and painted. The kitchen has a long counter adjoining the sink, with its cases of drawers and cupboards, its open space for the flour barrel, and cupboard above, all of which are convenient for the cook. It also has a cold-storage room, with refrigerator built in, to be filled with ice from the outside. The laundry is fitted with set tubs, supplied with hot and cold water, and is handily connected with the attic for drying clothes. This room also serves as an entry and wash-room for the men coming from fields and barn. Space is provided here for a dumb-waiter to the cellar next to the wood box. From the kitchen a door opens directly upon the broad, vine-covered arbor, which serves as an outdoor dining-room during the busy summer season. The floor of this apartment is of hard gravel.

The bedrooms, on a private hall, are well apart from the living-rooms, giving privacy and quiet, with convenient access to the bath-room. Bedrooms and bath-room can be reached directly from the kitchen without passing through the living-room; the broad, shallow closets, with folding doors, open wide. At the end of the well-lighted hall a chest and press are built in for linen and blankets. In the light, roomy attic, there is space at each end for a chamber, with ceiling height varying from six to eleven feet, and abundant storage space in the middle.

The cellar is excavated under the entire house, and contains storerooms, fuel bins, and hot-air furnace. It is amply lighted with large windows on the sides, not visible in the drawings. The exterior walls are of hard-burned common brick, ten inches thick, with two-inch air space. Such walls require no lathing. The exterior woodwork is left rough, as it comes from the saw, and is dipped in creosote stain. The interior woodwork is pine or basswood, painted in kitchen and living-room, and basswood, yellow pine, cypress or red-wood, stained, not varnished, elsewhere. Floors are of double pine. Walls and ceilings should be calcimined. Such a house should be built on an elevation back from the road and at least two hundred feet from the barn.

This is but a commencement of a number of farmhouse plans we hope to publish, and we would ask those of our readers who have satisfactory farm houses, costing, say, from \$1,500 to \$2,500, to send us photos, plans and descriptions for publication.

Experience with Chess.

The *ADVOCATE* is certainly a good and welcome visitor in our home. We all read it, and profit a good deal by its advice. We never waste a copy, but send them by mail or give them to friends.

Our experience with chess is as follows: I helped my next neighbor to cradle a field of Deil fall wheat, on new land, first crop. It shelled a good deal, and came up green all over that same fall. The land was plowed and sown with oats next spring. Around the stumps, where it was not plowed, there was a strong crop of chess, with hardly any wheat in it. The oats were a good crop. I sowed a field of new land with purchased seed, and after sowing

the first bag, took the rest home and fanned a lot of chess from it, but could see no difference in what grew from it and what grew from the first bag sown. It was all a good crop.
Simcoe Co., Ont. RICHARD ANDERSON.

Drainage for Dirt Roads.

We are not inclined to give much thought to road improvement during the summer and early fall season, when the majority of our highways are in good condition; but the importance of the subject forces itself upon us when the fall rains commence, and often in spring dirt roads are nearly if not quite impassable. To improve such roads, the effort is usually to get them graded up and gravelled. This, however, is in many localities overly expensive to carry out, and indeed is unsatisfactory unless the roadbed is properly drained. When this is done, fairly good roads can be maintained even without gravel, as is shown in the following article, written for the *Road Maker* by the expert, E. G. Harrison, U. S. Good Roads Dept., Washington, D. C.:

"Unless attention is particularly called to it, but comparatively few persons are aware of the great value underdrainage is to an earth roadway. While the principles connected with artificial drainage for cultivated land and public roads are the same, they differ in application, as the results to be obtained are quite different. In land drainage we seek to remove what we term surplus water by slow processes, leaving a portion in the earth or soil to feed the plants; in fact, we do not want to make the earth too dry. While in road drainage, we call water superfluous, we seek to turn as much from the surface of the roadbed as possible, by constructing the surface with a slope from center to side ditches, and making it as hard and smooth as we can, and that which enters in and goes down into the earth we remove as quickly as possible.

"It is not generally known how great an amount of water falls on an ordinary public road. If the road is three rods wide, the average rainfall on one mile in the United States is about 25,000 tons. While much of this runs off on the surface into side ditches and is carried from the road, a large quantity enters the soil; the amount varying according to the nature of the soil. In loose, common earth, the voids are about equal to the solids. It is the same in coarser clays and those which are said to "bake" and get quite hard on the surface and show large cracks. In ordinary, common earth, the voids equal about one-third of the space that the solids do; as we dig down into the earth, the voids grow less, being only about fifteen per cent. of the solids; then we say the earth is firm. This is why we dig to get a solid foundation for building structures. In all drainage we seek to lower the level of the water in the earth.

"The water which enters into the soil and is not removed by evaporation passes down into the pores of the earth, which we term voids; as the water passes down and comes to where the voids are smaller, the downward flow of the water is checked and the water is retained in the larger voids near the surface, until in time it sinks slowly down through the finer voids. It is this retained water that causes the mud. The wheels of the wagons sink into the earth softened by water, and churn it up, breaking up the harder parts so they will take in more water; the horses' feet act like a mason's hoe in a mortar bed, and the water mixed with earth becomes mud, which makes teaming expensive and personal travel an abhorrence. How can this condition of affairs be avoided? The answer is, by *drainage*. In *land drainage*, we place the drains deep and far apart, so that plant life shall have all the benefit of the water as it passes through the pores of the soil to the drains; hence, indirect drainage. In the case of *road drainage*, we place the drain tile nearer the surface and close together, so the water will get into the drain tile as soon as possible, and so that all, or nearly all, will pass into the drains and be carried from the roadbed before it will damage the road by softening it and become mixed with the earth and turned into mud; hence, direct drainage.

"In *direct drainage*, we are guided by the laws of nature, and follow them as closely as possible. When we find a roadbed that we call naturally good, we find it has a porous subsoil. The surface may be of fine sand or clay, or of both mixed; as we dig into it and as we go downward, we first find coarse sand, then pebbles, small at first and larger as we go down. This kind of material makes what we call natural drainage, for the reason that the water enters the fine surface, and what is not taken up by evaporation, passes down into the coarser sand and through larger voids in the pebbles, and thus gets away from the surface; the water not being held there as in porous clay earth, it does not mix up with material and make mud.

"Without natural drainage, the next best thing to do is to put in artificial voids; this is called *drainage*, and consists in making spaces or voids in the earth below the larger voids and, when possible, above the finer or closer voids. Two

drains from two to three feet deep, about eight or ten feet apart, under the center of the road, or where the road is mostly traveled, will answer. If two drains are found to be too expensive, one drain in the center of the most traveled part of the road will be found to answer a very good purpose, but is not as good as two drains. Where the earth is of fine clay, and consequently the voids are few, the water has more difficulty in reaching the drains; for this reason, more than one drain is desirable, so the water may pass off more quickly and not dissolve the finer parts of the earth nor remain there long enough to be formed into mud or made into ice when freezing weather comes.

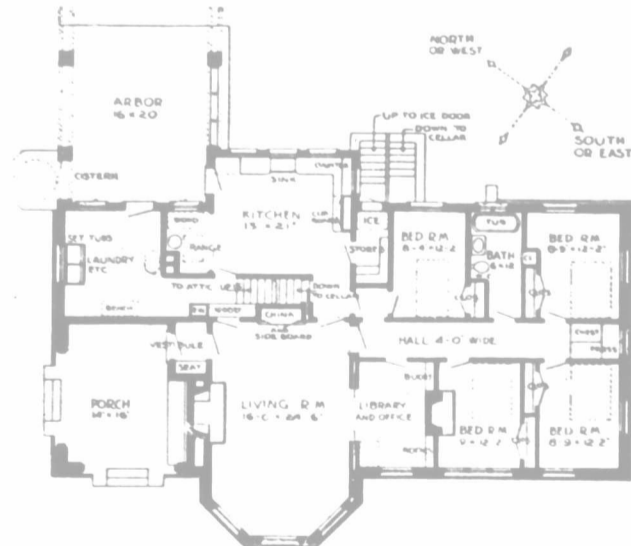
"Let us consider the operation of the rainfall. It only stays with us on the road, or in the road, because we dam it up, and make holes and ruts which hold it. Keep the roadbed smooth and hard, and it will soon run off. If it goes into the earth, it will not remain to trouble us if we assist it to get away by making a place for it to run to. Whenever it is held back by obstacles it cannot overcome, it makes a pool. It is not the nature of water to be inactive, and it begins the work of destruction by dissolving material which surrounds it; hence, a pool in a road always grows larger while it retains water. The earth is softened, and wheels cut into it, taking out the soft mud; the water reaches other earth and softens that, and the work of increasing the size of the hole goes on. Now let us follow the water which passes downward into the earth. The larger voids become filled first, but as more water comes, it passes on down until the smaller voids, taking less water, hold the water back in the larger voids, and the earth is said to be saturated with water.

"When there is no natural drainage, we use the tile drain, which furnishes a large void and receives the water. It finds its way in the loose joints; the surrounding earth voids being filled with water, it soon finds the open space or void the tile furnishes, and the tile being placed on a downward grade, the water flows readily to the outlet. When the rain ceases, the voids in the earth are emptied of water, which goes into the tile and passes off, excepting what is retained in the finer parts of the earth, which we call moisture; this is not sufficient to do much harm to travel, because as the water passes downward, the voids become filled with air, which soon dries the earth and absorbs the moisture, and the earth roadbed becomes hard and dry. This is the operation in the summer.

"Let us see what the tile drains do for us. After the rain has fallen for some time, the voids are all filled, but the water is passing down through the pores or voids as fast as it can get to the void or opening in the tile. The cold soon follows the rain, and the surface is frozen according to the degree of cold—say three inches; the water below this ice crust is passing out of the earth—draining, as we call it. It may not all get out, and freezing will follow; but as there is but little left, or nothing more than has been absorbed by the earth, as moisture, the freezing does not amount to much; as there is very little water to freeze, there is very little ice; instead of having three or four feet of ice formed on the earth, we only have a few inches.

"The few inches of frozen earth all cause some mud as the ice melts, but it will be comparatively little, as the water, when let free, will run down into the earth, find the void in the drain, and pass away. The mud, freed of water, is mud no longer, but simply earth; with voids emptied of water, the air takes its place, and the moisture in the earth is absorbed; consequently, the earth surface forming the roadbed soon becomes dry and hard.

"As soon as it is dry enough, the road machine should be used to level the rough places and put a



PLAN OF ONE-STORY FARMHOUSE.

crown on the roadbed by rounding it up; then let the roller follow, which presses the earth together, lessening the voids and making the roadbed smooth and hard, so that showers and light rains will pass off quickly; then riding is a pleasure, and teaming profitable."

An intelligent farmer has discovered that by planting onions and potatoes in the same field, in alternate rows, the onions become so strong that they bring tears to the eyes of the potatoes so plentifully that the roots are kept moist, and a good crop is secured in spite of dry weather.

Heifer Calves for the Dairy.

Most of the breeders of both the dairy and beef breeds will agree that the usefulness of an animal for either beef or dairy may be largely influenced by the feed and care it receives in early life. With dairy cows it is found that those with large stomachs and strong digestive apparatus are the most profitable in converting food into milk and butter. Never object to a big eater as long as she gives the returns in the pail. The aim in rearing dairy calves, especially with heifers, is to keep them in a growing, thrifty condition all the time and encourage a large stomach by feeding largely on bulky food, such as clover hay, bran, etc., and especially guard against their digestive organs getting deranged. It is quite a simple matter to raise a big, sleek-looking calf if you have no regard to cost, but to raise a good one cheaply is where the rub comes. When butter is worth from 25 to 30 cents per pound we cannot afford to feed it to calves very long. However, a good many practice false economy in taking the new milk away too early. Whole milk is the most perfect food we have for the young, and we can hardly afford, especially with pure-bred stock, to take many chances of deranging digestion by making a too early change from that food. At birth we usually leave the calf with the cow two or three days. This is largely a matter of convenience with us. We have equally good success by removing them from the cow at once, and they learn to drink readily even if they run with the mother a few days. We feed them warm whole milk from their dam until they are three weeks or a month old, commencing with six or seven pounds per feed twice a day, and gradually increasing until they are taking about ten pounds to a feed. By this time the calves are past the most critical period, have started to eat hay, bran and oats, and are chewing the cud. Now, gradually drop the whole milk from their ration, giving about four pounds of new milk, with from eight to twelve pounds of fresh separated milk twice daily. With heifers we generally drop the new milk out entirely when they are six weeks old, but with bulls, continue it a couple of weeks longer. A good deal depends on the condition and appetite of the calf. Many good feeders never feed anything mixed in with the milk, and have best success with feeding the grain ration, which is largely of bran and oats, dry immediately after they are through drinking. Mixing meal with their milk is one great cause of scours, as in gulping it down with the milk it is washed into the small intestines without being properly digested; and scours is simply indigestion, caused almost always by improper feeding. Pick out the lightest and sweetest hay for the calf barn, and give them all they will eat of it; and always provide them with clean, dry, well-bedded box stalls. A calf will never thrive well in dirty, wet quarters, and if we can find time to groom them several times a week, it is time well spent. It is a great promoter of growth and thrift. It is well to turn them out for an hour every fine day in winter for exercise. Calves that are born in late summer and fall we let go on pasture the following spring, with light grain rations continued. Calves that come in spring should not get to pasture until they are a year old. Nothing will stunt young calves quicker than hot sun and flies.

Buttermaking in the N.-W. Territories.

To the Editor FARMER'S ADVOCATE:

This has been a season to show the advantages of mixed farming over exclusive grain-raising, and in sections where dairying is carried on to any extent the farmers are in luck. The hard times, which must pinch most of those in exclusive grain-raising sections, will be comparatively little felt in this part of this great Northwest, as cattle-raising and dairying are the chief means of money-making. Dairying, of course, is not carried on to any great extent, except where there are creameries located; but the large increase in the output of the creameries shows that the farmers are realizing the advantages of the creamery in connection with cattle-raising. There are great possibilities for the dairy industry in this country; but it is doubtful if a grade of butter fit for export to such an exacting market as Great Britain can be successfully made here, on account of a certain weed which, in some localities at least, gives the butter a very perceptible flavor. Pasteurizing might overcome the difficulty to a great extent, but it is my opinion that the cream should be pasteurized while fresh and sweet, and that is not practicable where the cream is taken from the milk by the farmers, because it would not be done properly in many cases, and the results would not be uniform.

British Columbia is the natural market for our butter, and as they require a very heavily salted butter, the weedy flavor is not so perceptible, and does not affect the price materially, and as long as they take all we can furnish, we need not worry about the British market. At the same time, it

behooves us to be ever on the alert to improve our methods and to keep on raising the standard of quality, if possible, for there are other eyes on the British Columbia market besides ours.

The grass never got as luxuriant in the fore part of the season as it did last year, but the August and September rains have made a late growth such as never was seen here since the country was settled, and, in consequence, the supply of cream has kept up remarkably well.

YORKTON CREAMERY

has made this season fully fifty per cent. more butter than was made last season, and, judging from present prices, it bids fair to net the patrons as much or more than last year, which will give the creamery a boom, for many patrons are prepared to milk more cows, and others are ready to become patrons if the price realized this fall is as good as that of last year. The distance which cream is hauled here would make eastern dairymen stare; but this is a country of magnificent distances, and a mile here does not seem as long as a mile in Ontario. Our longest cream route is about 75 miles for the round trip, and not a drop of cream is got within 20 miles of the creamery, and on two other routes but little cream is got within 15 miles of the creamery, and yet the cost for hauling is only two cents per pound of butter.

Hand separators are being used to a great extent in some localities, while in others they are comparatively new. In one colony of Icelanders nearly all have them.

We have Hungarians, Scandinavians, Poles, Austrians, Germans, Icelanders, Galicians, Doukhobors, and others "too numerous to mention." As it is said, we have twenty-four different dialects spoken here in Yorkton, so one can imagine what a mixture of cream we get, and the wonder is that our butter turns out as well as it does, but it is accounted for by the fact that most of the cream is kept in the wells, which are usually about as cool as an ice house.

When the Doukhobors get cows, I think they will be a desirable class of patrons for a creamery, for they are a very cleanly people. I have visited



SHORTHORN BULLS, BEAU IDEAL AND LOOK-AT-ME.

Sire and son: four-year-old and yearling.

OWNED BY WM. GRAINGER & SON, LONDSEBROUGH, ONT.

several of their villages, and I found their houses, stables and everything in connection therewith models of cleanliness and neatness. They would have the advantage of having quantities of cream together without having to go all over the country to gather it. Their women are strong and used to outdoor work, and they give their cattle the best of care, and, being a pastoral people before coming here, they are well fitted both by nature and education to take hold of that kind of work. Another reason why they should be encouraged in that line of work is that they have been located so far from railroad facilities that grain-raising is out of the question, for it would never pay to haul it from 40 to 60 miles to market, and they must put their products in a more concentrated form, such as beef and butter.

THE SKIM-MILK CALF.

The smaller ranchers or those who combine a little farming with cattle-raising are realizing the economy of raising as many skim-milk calves as possible and making the cow produce butter as well as raising a calf; the large ranchers have to let their calves suck their dams, as milking the cows is out of the question; but from a profit point of view, the skim-milk calf has the advantage, and, if well cared for the first year, makes a larger and more growthy steer. The sucker has the advantage during the first summer, and, if pushed right along, will mature earlier than the other; but where the milking can be done without too much expense for hired help, the skim-milk calf is much more cheaply raised and, in the end, is the more profitable of the two. There are many cows, though, which do not pay for milking, and it is a waste of time and labor to bother with them, and the methods which many adopt in this country tend to dwarf or discourage the milking proclivities of their cows. Some allow the calves to suck for a month or so every spring, and then the calf is taken off to be hand-fed. This method spoils the cow every time as a milker, for most cows do not take kindly to hand milking after suckling a calf for even a week or two. A heifer

which is intended for the dairy should be milked for ten months at least the first year, so as to get her into the habit of holding out with her milk supply, but in order to do this, she must be fed and cared for, and not only the first year, but every year, for cows must have feed, care and comfort in the fall of the year if they are to hold out in their flow of milk. The creamery season is too short here, and it should be the aim of all concerned to make it a month longer every season. The creamery should open about the 1st of May and run to the end of October, and thus get six months' benefit, instead of five, as heretofore.

THE CARE OF CREAM.

I wish I could get the ear of every creamery patron in the Northwest, for I want to say a word about the care of the cream. Many take the best possible care of it, and send it in good condition, and to them is due the good reputation which creamery butter has, but there are others—not a few—who are positively dirty and careless in the handling of their milk and cream, and they are not all "foreigners" either. I know that the facilities in this new country are often inadequate for the proper handling of milk and cream, but I find that where a patron is anxious to have the cream in good condition he will generally find means to have it so. It is cleanliness we want in everything which comes into contact with the milk and cream, and then after the cream is secured, keep it in a cool, clean place, and keep it sweet, if possible. There are but few cellars in this country fit to keep cream in, because they are usually too warm and often not as sweet as they might be. The well is generally the best place around the premises for the cream, but it is not always good for the well, for the water is quickly fouled by a little milk or cream getting into it. A better plan is to have a shallow well, say ten to twelve feet deep, with a temporary building over it to keep the sun off in the summer, and have it filled with ice during the winter by pouring in water occasionally until it is full. The ice there would last all summer. It would be an ideal place for cream, butter, fresh meat, etc., and can be had on every farm, with little or no expense.

Some patrons tell us that they do not try to keep their cream sweet, because they get a better test when it is good and sour. Well, they may "in their minds." We know that the cream has to be soured before we can make a successful test, but that is part of the buttermaker's work, and it is better for him and for the patrons too if the cream leaves the farm sweet and allows the souring to be done under the supervision of the buttermaker, for the ripening of the cream is an important part of good buttermaking, but it is too often taken out of the hands of the buttermaker in the cream-gathering system. Where a cream separator is used, the cream should always be cooled to about 50° before being added to what is already in the cream can, for no matter how cool a place the cream is kept in, if warm cream is added twice a day, it will quickly sour, which would be all right if the cream was to be churned at home, but it is all wrong where the cream is sent to the creamery. J. STONEHOUSE.

Yorkton Dist., Assa.

Put Hens that Will Lay in Winter into Your Flocks, and You Will Make Money.

BY J. E. MEYER, WATERLOO CO., ONT.

It is now the season for us to look carefully over our flock of poultry to see that only such birds as will prove profitable are retained through the winter. If you have any hens in your flock that were over a year old last spring, it will be best for you to get rid of them, unless you find some of them well on in moult and in good condition, when you are likely to find such pay for keeping.

The best rule to follow is never to keep hens more than the second winter. Of course, to know the exact ages of your hens, you should have started to mark your chicks a couple of years ago. Do not fail to secure a chick punch and commence next spring; and in the meantime, you will do very well if you rid your flock of all hens that moult late—that is, all those that are not well moulted by Nov. 1st to 15th.

While moulting, your hens should be liberally fed on a variety of grain, of which wheat is best, with a soft feed once each day of ground oats, barley, corn, middlings, and bran, mixed, say two varieties at a time, as oats and middlings, corn and bran, or barley and middlings, or bran together with a little ground oil cake or sunflower seed.

Keep their roosting places free from drafts, and perfectly clean. Keep down vermin by applying coal oil to the perches once a week and keeping the droppings removed. During the day, give your hens the run of the barnyard and fields, where they will find much food, until snow comes.

Besides getting your flock of hens in shape for winter laying, you will have to look after your pullets. Now, half-grown late pullets are not

going to pay for their keep over winter, as they are certain not to lay before spring, when eggs are cheap. The food they will consume during winter in order to reach maturity will cost very much more than to bring them to maturity during summer and fall, so that it will not pay to keep any but the early-hatched, well-matured pullets, that will be ready to lay by December.

All the cockerels should be separated from the pullets by this time, and they should, like the hens, be carefully fed, kept clean, and given comfortable roosting places. One of the greatest losses amongst chickens is caused by allowing them to roost in

FEEDING YOUNG PIGS.

SUBSCRIBER, Grand Forks, N. D.:—"I have nearly 100 young pigs about two months old. They are being weaned. What would you advise me to feed them to get the best results? Barley is worth 50 cents per bushel; oats, 35 cents; ground feed—half corn and half oats—\$19.00 per ton; shorts, \$15.00 per ton; bran, \$13.00 per ton. The hog house is comfortable, with a yard for exercise. Can grind the grain feed."

[As the prices quoted for the different kinds of products very fairly represent their comparative feeding value, there only remains the question of the most suitable feed for pigs at their different stages of growth. We find that a mixture of shorts and skim milk is decidedly the best food for newly-weaned pigs, and if a separate compartment is made for the pigs, where the sow cannot enter, they can be fed with the mixture some time before weaning, and a check at that critical time of weaning can thus be avoided. As they have been accustomed to take their nourishment in small quantities and at frequent intervals, they should be fed, when first separated from the sow, five or six times a day. As the pigs grow older, the milk can be dispensed with and a stronger food, such as a mixture of barley, oats and corn, be fed to advantage, but in no case should any one kind of food be used exclusively. We have on this farm had excellent results from feeding wheat screenings mixed with oats and ground finely. I presume that the sprouted wheat, so plentiful this year, will also make very fair feed if mixed with oats or

that potatoes and Jerusalem artichokes are the most likely to succeed. The artichoke tubers should be procured as far north as possible, as they are generally rather late for this northern country. Exp. Farm, Brandon. S. A. BEDFORD.]

COTTONWOODS NOT SUITABLE ON HIGH LANDS.

H. C. Austin:—"I notice that nurserymen are very generally recommending cottonwood trees for avenues and shelter belts. What has been your experience with this variety on high, dry land on the Experimental Farm?"

[For some years the cottonwood succeeded well on this Farm, and gave promise of being useful, but for the last three or four years all the cottonwoods on high land have rusted so badly that fully two-thirds of them are now dead, but the trees that were close to a spring of running water have done exceedingly well and escaped the rust. I understand that our experience is similar to that of parties living south of us in the States, so that I do not feel like recommending cottonwoods for this Province. A far superior tree in every respect is the Russian poplar, which succeeds well on the uplands with us, grows just as fast, and the leaves remain later on the tree. S. A. BEDFORD. Experimental Farm, Brandon.]

POCKET GOPHERS.

F. Mc., Carberry Plains:—"Is it the common black mole that digs up dirt in the gardens and under stooks? Is there any way of getting rid of them?"

[The animal that does so much digging in certain sections, in gardens and under grain stooks, especially in harvests like the past, when the stooks remained so long in the fields, is not a mole, but the pocket gopher. These differ considerably from the ordinary gophers, although at a casual glance resembling each other a good deal. The pocket gopher has very small eyes and ears, strong claws on front feet (for digging), and pockets (hence the name) on each side of the head, which they use for carrying food into their tunnels. They spend nearly all their time underground, and feed principally at night. Their diet consists almost entirely of vegetable substances. They are not prolific breeders, like other varieties of gophers; they have but one litter a year, with but two or three in a litter. Probably the best way of catching these pests is that employed at the Brandon Experimental Farm, viz., locate the tunnel, which can generally be found running between two recently-made hillocks; remove all the soil from this runway for about two feet, place a common steel gopher trap lengthwise of the runway and a little below it, cover the trap slightly with soil, and then darken the excavation by placing boards over it. By this means, the gopher will usually be caught within an hour or so after setting the trap.

The following extracts from a pamphlet by Vernon Bailey, issued a few years ago by the U. S. Department of Agriculture, were published in the FARMER'S ADVOCATE shortly after the issue of the pamphlet; but owing to the extent of the pocket gopher nuisance this past harvest, the information will be interesting to many:

"The pocket gophers, in working their way through the earth in the construction of their tunnels, use the powerful upper front teeth as a pick to loosen the ground. At the same time, the fore feet are kept in active operation, both in digging and pressing the earth back under the body, and the hind feet are used in moving it still farther backward. When a sufficient quantity has accumulated behind the animal, he immediately turns in the burrow and, by bringing the wrists together under the chin, with the palms of the hand held vertically, forces himself along by the hind feet, pushing the earth out in front. When an opening in the tunnel is reached, the earth is discharged through it, forming a little hillock that resembles in a general way the hills thrown up by moles."

"Gopher burrows seem to have neither beginning nor end. They are extended and added to year after year, and in many cases those dug by a single animal would measure a mile or more if straightened out. I have never attempted to ascer-



PAIR OF SHROPSHIRE EWE LAMBS.

First-prize winners at Toronto Industrial Exhibition. First prize, and in first-prize flock at Western Fair, London; and one winner of sweepstakes as best ewe any age.

PROPERTY OF D. G. & J. G. HANMER, MT. VERNON, ONT.

poorly-made, draughty coops, where they catch cold, lose their flesh, and do not thrive. This can best be avoided by giving them comfortable roosting places and plenty of good food.

What we wish to impress upon our readers is that it is folly to expect to make money out of one hundred hens and pullets fed during the winter when twenty-five of the hens are too old to lay and twenty-five of the pullets are late-hatched, hungry, miserable things that eat their heads off several times before ever thinking of laying. Get rid of the twenty-five old hens and the twenty-five late pullets. Their room will do the fifty good birds left many times more good than their company. You will save in feed bill, and the fifty good birds left will lay when eggs are scarce and dear, and make you a handsome profit.

QUESTIONS AND ANSWERS.

Veterinary.

ROUP, GAPES.

R. R., Hartney:—"We have lost our young turkeys this season from roup, but the old hens have not been affected. Could you tell us if there would be danger of the disease appearing again if we kept the same hens for breeding next year? We intend getting a new gobbler."

["Roup" and gapes are separate diseases, dependent upon different causes. Roup is an inflamed condition of the lining membrane of the nasal cavities. The symptoms resemble those of severe catarrh. The discharge, at first watery and transparent, becomes opaque and sticky; the eyelids swell and stick together; the nostrils become plugged with the accumulated discharge; the sides of the face swell and the bird dies. Wet, improper feeding; dark, filthy, badly-ventilated fowl houses, and an insufficient supply of gravel, ashes, fresh vegetables, etc., are among the chief causes of this disease. "Gapes" is the term applied to inflammation of the trachea (windpipe), a disease to which all gallinaceous birds, both domestic and wild, are subject. If the trachea be examined, it will be found to contain many narrow worms about half an inch in length imbedded in slimy mucus. This singular worm is the *Syngamus trachealis*, and is no doubt the cause, rather than the consequence, of the disease. As to how these ascarides gain an entrance to the trachea is not well understood. The symptoms of this ailment are a gaping state of the bill (hence the name); watery discharge from the nose and eyes; change of voice; wheezing sound in breathing; dullness and loss of appetite. Neither of the above diseases being hereditary, there is no reason why you should not keep the same hens for breeding purposes. If, however, breeding arrangements are conducted in the same manner as before (which appears to have been in some measure faulty), it is quite possible that the disease may again make its appearance among your chicks. W. A. DUNBAR, V. S. Winnipeg.]

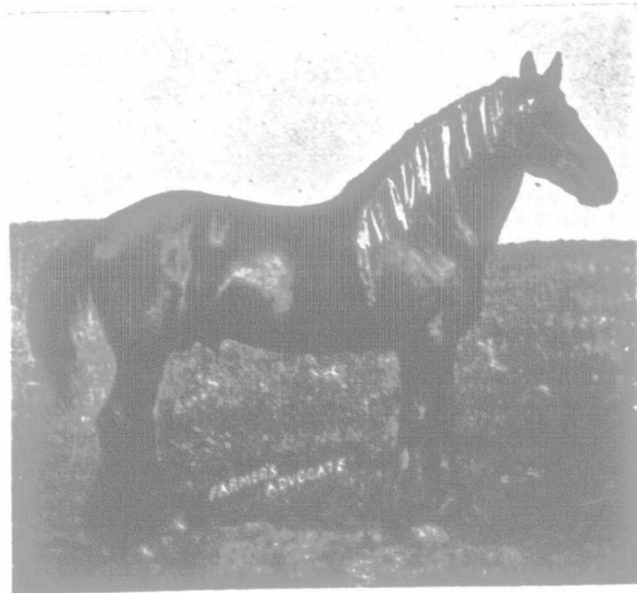
Miscellaneous.

BUSHELS IN A BIN.

OAT-GROWER, Parry Sound Dist.:—"How many bushels of oats would a bin contain measuring 12 by 6 by 6 ft.?"

[A measured bushel of grain is 1.28 cubic feet, and the bin in question has 432 cubic feet of capacity, or will hold 337 1/2 bushels of measured oats.]

had excellent results from feeding wheat screenings mixed with oats and ground finely. I presume that the sprouted wheat, so plentiful this year, will also make very fair feed if mixed with oats or



GROVE RINGMASTER (292).

Shire stallion, sired by imp. Grove Ringleader (1541), dam imp. Jessica (10182).

OWNED BY J. T. MONROE, NEPEAWA, MAN.

barley. For brood sows we prefer bran, oats and mangels in winter, and in summer find nothing equal to pasture and a small quantity of mixed grain. S. A. BEDFORD.]

GRASS FOR LOW LANDS.

SUBSCRIBER, Man.:—"Have considerable low-lying, very heavy land, along river, which in years of high water overflows for a period of perhaps a month or perhaps more. Would like to seed it to some kind of grass that would make good pasture. What kind of grass would you recommend?"

"2. Also have garden alongside of timber, where it is shaded from the sun, and roots grow very delicate. What would you advise planting where it is protected from sun?"

[On low-lying land in this section of Manitoba, we find Brome grass decidedly the best for pasture. It starts very early in the spring, remains green late in the fall, and if at any time it is pastured too closely, its rapid growth soon clothes the field with a mass of foliage. I would advise rather thick sowing on such land, say from fifteen to eighteen pounds of seed per acre. Very few garden or field roots can be grown successfully in a shaded spot. I think, however,

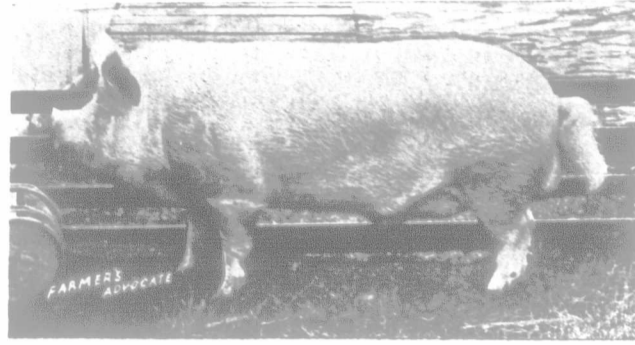


COTSWOLD YEARLING EWES.

First prize at Toronto Exhibition, 1900. PROPERTY OF JOHN RAWLINGS, RAVENSWOOD, ONT.

tain the actual length of one, but feel secure in making the above statement. At the end of a year, a gopher may often be found within 20 rods of the point from which he started, but in travelling this

distance he has paid no attention to the points of the compass. He follows a tender root for a few feet, then moves to one side, encounters a stone, and makes a second turn. A layer of mellow soil entices him off in another direction, and so on through a thousand devious crooks and turns. Sometimes the main passage swings around and crosses itself, or numerous side branches are extended various distances. The main tunnel usually runs from six inches to a foot below the surface. At intervals, varying from a few feet to a few rods, openings are made through which to discharge the earth, that make the little piles called "gopher



YEARLING YORKSHIRE BOAR.

First prize at Toronto and London Exhibitions, 1900.
PROPERTY OF JOSEPH FEATHERSTON & SON,
STREETSVILLE, ONT.

hills." The openings are closed by being packed so full of dirt that no trace of the runway is visible, except the little mounds that mark its course.

"*Mixing the Soil.*—That gophers have done great good in preparing the land for cultivation cannot be denied. For unknown ages they have been steadily at work plowing the ground, covering deeper and deeper the vegetable matter, loosening the soil, draining the land, and slowly, but surely, cultivating and enriching it. On the prairies that are swept each year by fire, the only vegetation remaining to decay and fertilize the soil is that which the gopher hills cover and protect from the flames."

"*Food.*—The food consists chiefly of roots, tubers, and other rather hard vegetable substances, though grass and the succulent parts of plants are sometimes eaten. In agricultural districts, the animals are highly injurious, destroying potatoes and other tubers in large quantities, and gnawing off the roots of fruit trees."

"*Use of Pouches.*—Though their eyes are small and their range of vision limited, the gophers lose little thereby in the dark underground passages. Touch, taste and smell take the place of sight as guides in selecting the roots with which they are constantly coming in contact while excavating their endless tunnels. They have broad, chisel-like teeth for cutting these roots, and large, fur-lined pockets in their cheeks in which to carry their food. Under cover of overhanging vegetation, they fill these pouches with green leaves and stems to carry back and eat at leisure in their holes. In half a minute, enough food for a good meal may be collected and stowed away, while a much longer time would be required to eat the same where collected. This arrangement is especially important to the gophers, from the fact that their sight is not keen. Probably their vision is better at night, or at least during the twilight, for then they are the most active."

"Chipmunks, squirrels and ground squirrels take food in their mouths, and with the tongue push it out between the teeth into an elastic pouch, just as boys put marbles in their cheeks. In the squirrel and chipmunk, the cheek pouches communicate with the mouth. In the pocket gopher (also in all species of pocket mice and kangaroo rats), the pouches open from the outside along the front of the cheeks. They extend back under the skin to the shoulders, are lined with short hair, and are enveloped with muscles."

"The pockets are often stuffed so full of pieces of roots, stems and leaves as to distort the appearance of the animal's head. Roots and stems are cut in sections about an inch long, so as to fit the pockets nicely, and are packed in lengthwise. Leaves are folded or rolled to fill the smallest space."

"Although it is commonly supposed that the pouches are used for carrying dirt out of the holes, the fact is they are never used for this purpose."

LEG WEAKNESS IN DUCKS.

MACKIE BROS., N. Westminster, B. C.: "We have had a lot of our ducks die. They lost all power in their legs, and could not move. What was the trouble? Kindly give us treatment for same."

[Leg weakness in ducks is frequently caused by a lack of grit in the ducks' food. Where ducks are being grown, it is always best to mix in the food some grit—either gravel or, better, mica crystal, in the proportion of about a large handful to a peck of food. This has always prevented leg weakness, and where coupled with a fair amount of exercise, will usually cure the trouble. If ducks are too weak to walk at all, place whole grain in a trough filled with water to depth of about eight or ten inches, and induce the birds to exercise in this. This is only required in very rare cases. W. R. GRAHAM, O. A. C., Guelph, Ont.]

BEE PASTURE.

A. B., Strathclair:—"I have had very good success with bees. This section is apparently well adapted for them, but I would like to fill up some gaps in the bees pasturage during the summer months. What would you advise me to sow or plant? Does basswood thrive here?"

[Basswood is quite hardy in some parts of the Province, notably at Portage la Prairie, near Carman, and on the Red River, but it is difficult to propagate from seed, and the tree is a slow grower. Perhaps the best plant for your purpose is sweet clover. The plant is a biennial. Sow the seed one year and it makes a small plant that season, but the following year blossoms very freely and dies in the fall; the blossom extends over a long period. I prefer the white variety for bees. The plants should not be allowed to ripen their seed, as sometimes they prove troublesome as weeds. Exp. Farm, Brandon. S. A. BEDFORD.]

ROUP IN TURKEYS.

R. R., Hartney, Man.:—"We have lost our young turkeys this season from roup, but the old hens have not been affected. Could you tell us if there would be danger of the disease appearing again if we kept the same hens for breeding next year? We intend getting a new gobbler."

[Every effort should be made to disinfect the house or wherever the sick turkeys have had their habitation or resorts. In other words, the germs of the disease should be destroyed, whether in house or ground. The frost of winter might help to do so, in the latter case. But wherever the germs of the disease remain, so long is the disease liable to affect the birds again. As to breeding from birds which have had roup, but have recovered, much depends upon the severity of the attack. For my own part, I do not like to breed from stock which have had the disease in its more advanced stages. I think it is Dr. Salmon, of Washington, who says that birds do recover from roup of the milder type, and that no germs of disease remain in their system. In such a case, with a robust male, the females might be used again. But before it would be safe for new stock, or the recovered birds, the place of resort and premises must be thoroughly eradicated of all disease germs. And the use of corrosive sublimate, in proper proportions, will most effectively do so in the case of the premises. The ground should be plowed or spaded over. On page 222 of 1899 report of Central Experimental Farm, of Ottawa, Poultry Report, directions are given how to use the corrosive sublimate, as follows: "Dissolve corrosive sublimate, four ounces, and an equal quantity of salt, in two to four quarts of water, and when completely dissolved, dilute to twenty-five gallons; spray every crevice, nook and corner of the house carefully. This mixture is very poisonous, and must be used accordingly. After spraying it is well to apply a coat of whitewash."]

Chatty Stock Letter from Chicago.

FROM OUR OWN CORRESPONDENT.

Following table shows current and comparative live stock prices:

Beef	Extreme prices now.	Top Prices		
		ago.	1899	1898
Beef cattle.				
1500 lbs. up.....	\$3.30 to 6.00	\$6.00	\$6.50	\$5.70
1350 to 1500 lbs.....	4.85 to 5.90	6.00	6.50	5.85
1200 to 1350 lbs.....	4.50 to 6.00	5.90	6.40	5.75
1050 to 1200 lbs.....	4.35 to 5.90	5.80	6.25	5.60
900 to 1050 lbs.....	4.20 to 5.87	5.60	6.80	5.50
Fed Westerns.....	4.75 to 5.80	5.65	6.30	5.45
Stillers.....	2.10 to 4.45	5.50	5.55	5.10
Stockers and feeders.....	4.50 to 4.95	4.75	4.75	4.70
Hogs.				
Mixed.....	4.40 to 4.92	5.35	4.50	4.00
Heavy.....	4.40 to 4.90	5.42	4.50	4.00
Light.....	3.25 to 4.50	5.15	4.45	4.00
Pigs.....	2.75 to 4.15	5.15	4.35	3.85
Sheep.				
Natives.....	3.25 to 4.15	4.15	4.60	5.25
Western.....	4.00 to 4.25	4.25	4.15	4.60
Yearlings.....	3.50 to 5.65	4.25	4.50	5.60
Native lambs.....	4.00 to 5.40	5.10	5.75	6.10
Western lambs.....	3.30 to 5.85	5.10	5.25	5.60
Feeding sheep.....	4.00 to 4.70	4.00	3.60	4.10
Feeding lambs.....	4.10 to 4.80	4.75	4.60

People in the live-stock business do not seem to have any good grounds for complaint at present.

A load of 21 head of prime grade Angus steers, averaging 1,291 lbs., sold for \$6. They were shipped by M. Downey, of Alledo, Ill.

Some 1,700 to 1,780 lb. cattle sold at \$3.60 to \$3.75, and they had extra good quality. Some 354 lb. yearlings sold at \$3.87. This shows about how the situation is running. The choice light weights are out-selling the best heavy grades. It will be noticed that while the best heavy cattle are no higher than a while ago, the lighter weights show an advance of 10c. to 30c. per 100 lbs.

There are a good many Western live-stock men getting into the business of exporting live cattle, sheep and horses independent of the regular heavy exporters. Some of them get pretty badly nipped at times, and now and then one makes a lucky strike. The big fellows, of course, expect occasional setbacks, and losses that would kill off small people they do not seem to mind.

The supply of good, ripe heavy cattle now ready for market is very large and dealers are not very hopeful of better prices on the big weights. Corn prices, however, keep up considerably higher than last year, and the general demand for meat does not grow any less.

Hog prices have taken a big drop lately. The packers made a "dead set" against paying the late high prices, and the result was a good big slump in a very short time. The marketing of hogs at all points was the largest on record for the tenth month, but the demand also never was any better. Hog prices touched the lowest point since last January, the average price being 8c. lower than the high week last April, and 35c. higher than the low week of the year, which was the first week of last January. Last week's average was 4c. higher than the corresponding week last year.

The sheep market is in fairly good fix and farmers and feeders are having trouble getting all the feeding or store sheep they want.

Range Horses Sold in Toronto.

Two hundred range horses from the Northwest arrived in Toronto on Oct. 16th, and were sold at Messrs. Grand's Repository, by Mr. Harland Smith, on Oct. 19th and 20th. Among these were some very superior, well-bred carriage horses. Most of them showed excellent points; the few draft animals showed Clydesdale breeding; the saddle horses were of no particular breed, but excellent shoulders, backs and loins, very suitable for saddle purposes. The ponies were a very level lot, showing good selection, evidently a cross on the native wild Indian. They could scarcely be termed mustangs, although there were traces of that breed. There were 145. Seventy ponies came from the Government Range in Calgary, N. W. T., and were yearlings and upwards, sold at from \$13.00 to \$40 per head. The draft horses sold from \$25.00 to \$90.00 per head. A chestnut-roan gelding, well trained for saddle work, very superior quality, fetched \$150.
October 26th, 1900.

Increased Freight Rates From South America.

The steamship lines sailing out of Liverpool, London and Glasgow, to the River Plate and South American ports, have followed the example of the Canadian trade and decided to increase the rates of freight by 10 per cent. in consequence of the high price of coal. The increase will figure on the bill of lading as "coal primage."—London Meat Trades Journal.

Grapes and Peaches Successfully Shipped to England.

Trial shipments of such perishable fruits as grapes and peaches, sent to Liverpool and Manchester, England, by the Dominion Department of Agriculture, have arrived in prime condition, according to despatches from those ports. They were carried in chambers ventilated by means of electric fans. A letter from Liverpool, addressed to the Minister of Agriculture, says, among other things: "Judging by the samples, it could not possibly arrive in a state better suited to the requirements of the market. The quality and size of the fruit itself leaves nothing to be desired, and if your instructions are followed in regard to packing and transport, the success of the trade is assured. Ten days have elapsed since the fruit came out of cold storage, and no signs of deterioration are visible. The splendid arrangements made on most of the newer boats crossing the Atlantic make the carriage of tender fruits perfectly satisfactory, and the result is that the Canadian growers have been able to put their fruit on the English market in a perfect condition."

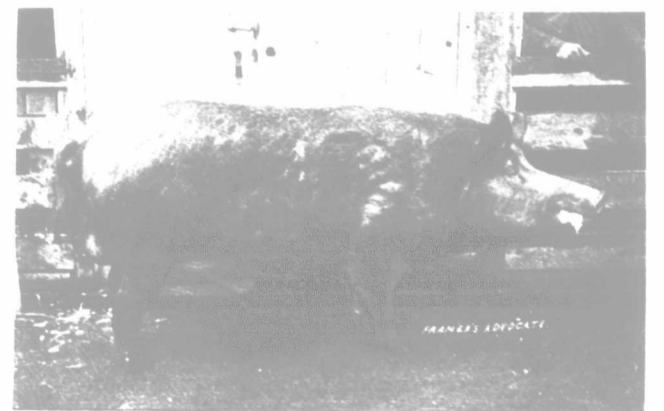
Mr. R. M. Ballantyne, the well-known cheese dealer, of Stratford, Ont., has been made a partner in the Canadian business of Lovell & Christmas, London, Eng., one of the largest dealers in dairy produce in the world. He will remove to Montreal and be manager of the Canadian business of the firm.

Cattlemen of Washington County, Kansas, recently shipped 406 fat cattle direct to Glasgow, Scotland, where they were sold at 13c. a pound, estimated dressed weight, three hours after landing. The percentage was fixed at 63, cattle averaged 1,538 lbs., proceeds arrived at by taking 63 per cent. of total weight at 13c., or by American plan \$8.50 per 100 lbs., live weight. Expenses were heavy; ocean freight, \$12.50 per head; freight to Boston, insurance, commission, etc., about \$25.

Mr. R. R. Elliott, Staten Island, N. Y., writes the FARMER'S ADVOCATE: "I notice in your issue of October 1st an editorial dealing with the causes for the deterioration of Canadian beef. Three very important reasons were given, viz., use of mature sires, the introduction of more or less dairy blood, and the use of the scrub sire. These all have a very important bearing, and are largely responsible for the inferior feeding steers to be seen all over the country. Another reason has been forced upon me recently, during frequent visits to the Union Stock Yards in New York City. A few days ago I was surprised and pleased to see unloaded at the yards several carloads of very fine 2- to 3-year-old steers of the thick, blocky, 'meaty' type. Two cars were loaded with high-grade Herefords, all alike in color and all dehorned, and would average about 1,100 lbs. The others were choice high-grade Short-horns and Herefords mixed; also all dehorned, and showing breeding on the part of both sire and dam, and all were well finished. New York is much behind Chicago as a stock market, and I can readily understand why from 6 to 7 cents, and even more, has been paid there for choice steers. It is the large number of high-grade beef cattle that can be secured in the States that tends to keep up the prices. In Canada, while I have seen a few steers equal to anything on this side, still the great majority of the shipping cattle, while they may be well finished, are not uniform in size, shape or color, showing very mixed breeding, and in a great many cases too much tendency to the dairy type."

British Apple Market.

Messrs. Simons, Shuttleworth & Co., Liverpool, cable their apple market as follows: "To-day's market opened weak, and continued so throughout the day, although prices show no



TAMWORTH BOAR.

Winner of first prize at the Canada Central Exhibition, Ottawa, 1900.
OWNED BY REID & CO., HINTONBURG, ONT.

material decline. The following quotations are for first-class, sound fruit; only the finest samples made top prices; lower grades and conditions ruled from 25c. to 35c. below our lowest: Baldwins, Canada Reds, Ben Davis, Phoenix, Rox Russets, 12-6d. to 15c.; Kings, 20c. to 25c.; Seeks, Spies, 18c. to 13c.; 6d.; Greenings, G. Russets, 20c.; Pippins, 18c. to 15c.; Cranberry Pippins, 18c. to 15c.; Snows, 16c. to 18c.
Messrs. Garcia, Jacobs & Co., London, cable their market today as follows: "Our market opened with an active demand, and closed the same. Choice to fancy Baldwins, 16c. to 17c.; Greenings, 15c. to 17c.; Kings, 18c. to 20c.; ordinary stock, 15c. to 18c. less. Off conditions and lower grades, 25c. to 18c. less than quotations for best stock."



Notes from an Old Notebook.

In the columns of the Home Magazine Department of the FARMER'S ADVOCATE of the 5th October last, under the heading, "Our Library Table," appeared a review of a most valuable contribution to Canadian literature, entitled "The Women of Canada, their Life and Work." It is a present-day record, and one of which not only the women, but the men, of our land cannot fail to be proud, for it tells of growth and progress everywhere throughout our beloved Dominion—our broad, large-hearted Dominion, which recognizes enterprise and pluck and perseverance in son or daughter alike, and welcomes at the hands of either, any and every development of its wonderful resources.

As we pass milestone after milestone of our individual and collective lives, it is well now and then to rest awhile, whilst we look backwards upon the old tracks over which we have travelled, and thus from a past gone from us beyond recall, to learn some salutary lessons which may be helpful to those who come after us.

The handbook of which I speak has already entered homes in nearly every country upon the face of the earth, whose representatives gathered, this summer, at the wonderful meeting of the nations at the Paris Exhibition, telling them of the Canada of to-day, and of the foremost rank amongst the colonies of the world, to which it can fairly lay claim. The "Old Notebook" to which the ADVOCATE now introduces you, and from the yellowed and torn pages of which it has culled some extracts, tells of the Canada of two and twenty years ago, of its exhibits at the Paris Exhibition of 1878, and makes incidental allusion to names once so well known, and always honored and loved by the Canadian people, their Excellencies the Earl and Countess of Dufferin. Sketchy as are the notes, and long ago as they were penned, they should not be without interest for our thoughtful readers, but they should be read with a due sense of proportion and with an intelligent comparison of the possibilities of the past with the enlarged and expanding opportunities of the present.

So much by way of introduction. The notes shall speak for themselves. Their heading is as follows:

"ON FOOT THROUGH THE COLONIES; OR, NOTES FROM OUR LOG IN PARIS, 1878."

The writer says:—

"My old inveterate habit of note-taking has again seized me, in the very heart of this great world's show, and I send my jottings knowing that they will not be of less interest to you all than were those other jottings sent only a few months back from the wilds of South Africa.

"It seemed to follow in natural sequence that we should come to Paris—as many of our party at least as could do so—to see the gathered wonders of countries, new as well as old; we who had travelled so far to seek them where they are, after all, perhaps best to be seen. We had thought it would be good to note in full development much that we had viewed only in the rough, as it were; to see as a finished whole, what had of necessity appeared incomplete; *here*, the crude materials; *here*, the vast uses to which they could be put. 'What man has done, man may do,' and those who, with thoughtful forecast, look well ahead, may, from even the comparatively few specimens of colonial products here exhibited, predict what a mine of wealth they may prove by and by to those who know how to use them with a wise skill and industry.

"All very fine, old fellows! Geoff had said as we had passed one dazzling vision after another of the finished beauties of countries whose civilization dated centuries ago; 'all very fine! but you are old hands, you know; you just wait a bit, and we colonists will astonish you yet!' Geoff, on the strength of his South African wanderings, quite believes that he has a right to his self-bestowed title, and with a boy's love of taking sides, stands up for Old England's far-away children as if every proof of greater excellence born of longer experience and other self-evident advantages were a direct attack upon them. 'If I am not a colonist now,' he urges by way of explanation, 'I mean to be one some day, so it comes to the same thing.' Geoff has been 'grinding,' and has well earned his holiday. 'Let us go to Paris, Pater,' he had said; 'Aunt Hetty can skip a few blank pages in "Our Log," and begin a fresh one headed "On Foot Through the Colonies,"' and thus it came about that I find myself, notebook in hand, wedged in between two blocks of veritable South African timber, the 'Boschboerboom' and the 'white milk wood'; the eland's thorn, the sneezewood, etc., all nigh at hand; the well-made Cape cart, whose familiar friendliness has tempted me to its rear for shelter, affording me the privacy I need for my little paper chat with you. 'Time is up, Auntie; you must have written heaps about our more especial Colony, and you will have none left for

what you used to call yours, before we had our little African outing. Come to Canada, 'tis just next door. The educational department nearly gave me a fit of the shivers, so horribly real and complete is it in every particular, from the building in which the "young idea" is taught, and the book he learns from, to the very bench upon which he sits, and the desk at which he writes. Ugh! . . . There are the very jolliest photographs of the snowshoe and the golf clubs, of a carnival at the skating-rink, a . . .

But of what more Geoff saw, and of what I shall see when I pay an hour or two's visit to Canada on Monday, as I hope to do, I must tell you another time, for as he has reminded me, time is up! . . . Monday, 9th September, 1878.—'Surely there ought not to be a single dunc in the whole Dominion of Canada!' laughed Geoff, as—his pretended shudder over at their power to recall sundry scenes of schoolboy life—he showed me the exhibits in the educational division, where truly Canada need lower her colors to none. Perfect in every detail appears to be the scheme of education for all classes, nothing omitted or unnecessarily added to cumber or overweight, nothing overlooked which can encourage the timid and less gifted, or incite to greater efforts those with an ambition to win honors and a name in any career they may choose for themselves.

"All work and no play makes Jack a dull boy! Now, no Jack in Canada need be a dull boy, for there is no lack of amusement found for him there. This thought struck me as I stood looking admiringly at some excellent photographs of the members of the snowshoe and golf clubs of the Dominion. In the foreground of the latter stood the well-known figures of Lord and Lady Dufferin, who have found their way, both of them, to the warm hearts of the people with whom they must always be now identified. Lady Dufferin, muffled in the many folds of that specialty of Canada, the cloud, looks every inch a Canadian, a comparison which I am sure she need not resent, for who has not heard of the beauty and grace of our sisters over the water? 'Comme elles sont belles ces Canadiennes!' I heard ungrudgingly remarked by a little bright-eyed Frenchwoman behind me, who was peeping over my shoulder at the colored photograph of the carnival at the skating-rink, and at one or two pictures of well-known beauties and people of mark. Her words recalled me from 'long ago' to a sense of the present, reminding me that time was too short for musing and memories. As I turned from those well-executed groups which lived for me, I could almost fancy that the sound of the sleigh-bells died away upon my ear, and that I should have seen the flakes of snow fall lightly, presently, could I have stayed to watch the grey cloud softly 'unfeather' itself, to drive homewards, by its gentle persistence, the merry-makers from their game upon the frozen river.

"Specimens of needlework, etc., exhibited by Canadian ladies, deserve mention. The Misses Strickland, from Oshawa, contributed largely, exquisite lace-work, tatting, etc.; Miss Farquharson, of Whitby, a pianoforte cover delicately painted upon white velvet; and Miss Belle Russell, of Ottawa, a pale blue satin banner-screen trimmed with lace of great breadth; while Mrs. Ellen Villiers, of Toronto, sends some painting on china, executed with delicacy and much artistic taste.

"There is hardly an industry unrepresented in this department, showing how well on in the race is Canada, and each is equally good of its kind. Geoff was attracted by the models of the canals, lock-gates, and not a little by the saddlery, the merits of which have been acknowledged by medals won at previous exhibitions.

"The stoves of the Dominion are excellent, without exception, their makers being taught by experience how to provide the largest amount of heat with the least possible outlay. Our English grates might well be improved after the Canadian model—i. e., so arranged that half the warmth should not escape up the chimney, and so shaped that what is called a 'blower' should fit, when needed, to the bars to exclude the air until the dying fire, by means of the gathered draught, burnt up again. Who does not know the discomfort of those shivering moments of waiting while the maid with paper and stick tries to coax back into life the flame which seems alike impervious to vigorous efforts and to gentler measures?

"Woolen and cotton stuffs, washing-boards and perambulators, organs and refrigerators, sewing machines and machines of all kinds, turnery, ropemaking, boot-making and boat-making, stained glass and pottery, etc., etc.; specimens animal, vegetable and mineral—all are here, some almost in profusion. There are hats, too, of the Montreal Felt Hat Works, marked at four and a half dollars per dozen, and, if the glass does not deceive me, of exceptionally fine texture and good workmanship. Self-fitting skates, and skates of many shapes and sizes, shone like glass, and drew many observers. So much were the rocking-chairs fancied by first-comers to the exhibition, that they were all bought up within the first few days. An elegant set of drawing-room furniture was noticed by many, and the case of confections, with the pyramids of fancifully-arranged 'popped corn,' caught the admiring eyes of others. Pictures of those triumphs of engineering skill, the railway bridges spanning the vast rivers of Canada, could be overlooked by none; and to name lesser things with greater, neither could the photographs of the palatial hotels of Canada, some of the many which

abound in its large cities, ready to entertain right royally any number of visitors who may be tempted across the Atlantic by seeing here in Paris specimens of the innumerable objects of interest the Colony can show them. Mother Nature, too, has been bountiful in her gifts, therefore the Dominion has need to provide these great hostelries to meet the requirements of the countless numbers who visit the huge half-continent, attracted, many of them, by the fame of its almost unrivalled natural beauties, those grand, broad, majestic rivers, with their rapid currents, bearing fleet after fleet of rafts manned by hardy lumberers, who have robbed the noble forests of millions of century-old trees, yet leaving standing others to supply the wants of generations yet to come. Has not Canada its Niagara, too? Its sea-like lakes? Its . . .

But I must 'hark back,' though sorely tempted to tell something about them! The marbles, granites, etc., I observe, are much noticed and critically tapped and examined by several for whom they have special interest; but what pleased me best was a modest little jar of brick clay from Stony Mount, Manitoba. Now, in my very young days, when Manitoba was but a simple settlement, with scattered houses and few inhabitants, a brick had never been seen there, and when a lady, for whom I had, and ever shall have, a great esteem and regard, urged upon the people how easily they could make them, with the wherewithal so ready to their hands, they understood nothing of her teachings, and were well enough satisfied with the solid logs, which certainly made them substantial and warm, if not very ornamental, houses. Now, bricks and brickmakers flourish, and streets and rows, squares and crescents, villas and lodges, take the place of Hallett's Point, Spence's Creek, Logan's Mill, and so forth. Growth of every kind in Manitoba, but 'Stony Mount!' 'That's a bit of a puzzler, is it not, Auntie?' queried my almost ubiquitous nephew, who had just returned to me again after what he called 'a meander.' 'I have heard you say that you could wear the soleless moccasin without inconvenience, because there were no stones in old Red River, and that there was no hill in or near the settlement. This "mount" must be an imported Yankee notion, I opine.' A long, gradual and very gentle rise was the only mount I could remember, and probably from it was sent the clay exhibit. That, with a few specimens of the potatoes and grain of the country—grain of great size and fullness, and which grows with but little effort of culture there—composed, as far as I can see, the whole Manitoban contribution to the exhibition.

"Passing out from the section under the symbolic emblems which crowned its entrance—wheat-sheaves, grouped fruits, antlered heads, and smaller animals stuffed and naturally posed, etc.—Geoff piloted me to the great Canadian trophy in the grand vestibule. There was quite a crush of people awaiting their turn for admission, too many at a time not being allowed to mount the circuitous stairs from base to top. Upon every landing various specialties of the Dominion were placed, and from four sides of each gallery we could gaze upon the crowds below.

"Many articles shown here we had noted more in bulk in the section we had just quitted, but others we saw for the first time. The toboggan, or long flat sled, upon which Canadian children, and light-hearted grown-up folks too, on pleasure bent, disport themselves, flying down the frozen mountainsides with lightning speed and merry recklessness; the smaller wooden sled, on runners, the delight of every Canadian youngster's heart; the snowshoe, simple and ornamental; the birch-rind canoe, the Indiansaddle and bead-worked saddle-cloth, samples of silk-work, leggings, moccasins, all brought back, in friendly guise, scenes of 'Auld Lang Syne. Geoff pointed out a plough, which to my unpractised eye seemed perfect of its kind, and I think I was not far wrong, for others looked approvingly at it likewise, whilst some also handled the backwoodsman's axes lying around us as if they too deserved their meed of praise. If there are many trees left like the large exhibited specimen in the grand vestibule, labelled, 'Canada, Pacific Coast—Douglas Fir, 100 metres high—506 years old, aged 183 when Columbus discovered America,' and which, flag and hatchet crowned, is the observed of all observers the axes would need to be of vast strength indeed to fell them to the earth.

"The big trophies swayed threateningly as we, with others, reached its summit, but it is erected on too firm a basis to cause any fear of its safety. On following the stream of outgoers by its other outlet, we found that more remained to be inspected. Two black or dark brown bears stood as sentinels, upon one of which was the usual label, 'Priere de ne pas toucher.' Alive, the request would certainly have been reversed, but its glass eye, fixed amiably upon vacancy, gave Bruin an air of humble appeal quite in keeping with its unspoken prayer. I could not help smiling as a tricky young sprite deliberately went up to the creature, first giving it a friendly 'shakepaw,' and then, seeing the back of the caretaker was safely turned away from her, a contemptuous little flick upon the nose, as one who should say, 'Who cares for you!'

"Close by their bearships stood a massive coil of rope, and what I took to be lighthouse lamps and appliances; to their right, in a well-arranged case, some wonders from the petroleum works of Messrs. Waterman—candles of various shapes, sizes and colors, with some curious and even beautiful designs in petroleum wax, such as a miniature column

on base, and a cross with wreath, bunches of flowers and monogram—a kind of monumental design, fanciful and clever enough, but decidedly odd. A third cabinet held plumbago, in the rough, as well as prepared as pencils, etc. A table of inlaid woods, with sample of window-frames, doors, etc., we found just outside, and they repaid examination, whilst we refreshed our inner man by a taste of the big cheese, which was handed in small slabs to any who cared to know what a good article of its kind Canadian farmers make. Geoff, partly for mischief, and partly because he thought 'the stuff not half bad' to eat, with the remains of a broken biscuit in his pocket, walked around the trophy twice, so as to present himself as a newcomer and thus get a double portion. The fourth glass case showed wools, wax, fruits, and so forth, and when I have named the large block or column of coal from the Atlantic coast, and the comparatively small ditto representing the gold found in Canada, I think I have only left myself space to speak of the short visit we paid to Mr. Keefer's office, facing upon the street of model houses, where more particular information about the Colony is readily and courteously given when asked for. Here we met several Canadian friends, and at their recommendation tasted not only some excellent light wine from the Isabella grape, a vintage from Pelee Island, Lake Erie, but some of that specialty of Canada, the maple sugar. 'Some people inquire if this is a model Canadian house—(it is that of an Old English, probably a Chester dwelling). We tell

ful conjunction upon our dessert tables, but indeed we do nothing of the kind. Our idea of what they really are, is, at best, but an approximate one, and as "half a loaf is better than no bread," this is something to be thankful for; but it is not the fruit itself as Nature would hand it to us from the parent stem.

Acres and acres of pineapples! It requires a very distinct effort of the imagination to believe in their existence even in beautiful Hawaii, but that is just why we want you to have our picture, which speaks for itself. H. A. B.

THE QUIET HOUR.

Leading Captivity Captive.

"The Lord gave me a bitter draft, and said
'Drink it quite up.'
I, slowly lifting up my languid head,
Turned from the cup.
'Be brave, my child, be brave and falter not;
'Tis for thy good.'
I looked again, I looked and trembled not,
And said I would.
I reached the cup and set it to my lip,
Hearing Him speak,
But set it down again without a sip,
For faith was weak.
Again He said, so sweetly and so soft,
'Be brave, my child.'
As with both hands I raised the cup aloft,
He looked and smiled.

everyday life, as well as to the death of martyrs. They would have dishonored their Master's name if they had proved themselves cowards when called to witness for Him. Why should we think we have a monopoly of defeat and cowardice? If we intend to be conquerors in the end, it would be wise to begin the victory at once. This life is full of paradoxes: though we may be sorrowful, yet we are to be always rejoicing; we may be weak, yet that weakness is to be full of strength; we may be passing through a desert, yet it is to blossom as the rose, and the parched ground is to be refreshed with pools and springs. This is not idealism; it is a sober fact, or should be. As the Cross of Christ marks the blackest crime in all history and yet shines with a light sufficient to illuminate eternity, so it should be, in our measure, with each one of us. Our crosses, whether they be great trials which cut us to the heart or little everyday vexations which have a tendency to destroy our peace and make us irritable or downhearted, may be led captive and forced to do us service. The darker they are, the more light they may yield. Only he who, like Christ, willingly accepts his cross can understand what it means to lead captivity captive.

"If Himself He come to thee, and stand
Beside thee, gazing down on thee with eyes
That smile and suffer, that will smite thy heart
With their own pity to a passionate peace;
And reach to thee HIMSELF the Holy cup,
Pallid and royal, saying, 'Drink with Me!'—
Wilt thou refuse? Nay, not for Paradise!
The pale brow will compel thee, the pure hands



PINEAPPLE CULTIVATION IN HAWAII.

them "No," but that we could show them some quite as good, if not better, over the water, if they would like to come and see them," said young Mr. Keefer, with a merry twinkle of his eye. I think I cannot better wind up my little account of my visit to 'Canada' as it is in Paris, than by recommending those who would like to make a better acquaintance with that grand old Colony itself to follow Mr. Keefer's advice by coming to visit it themselves at as early a date as possible. We can promise them a hearty welcome. H. A. B.

Pineapple Cultivation in Hawaii.

Our picture represents a pineapple plantation in the Hawaiian Islands, where responsive nature offers a prompt and ready welcome by means of soil, climate, and frequent rainfall to almost every species of vegetable product which the hand of man may entrust to her natural bosom. Not only what is indigenous grows with a magnificent profusion only possible in a tropical climate, but it also will grow and flourish diverse crops which have failed in many other places where their cultivation has been attempted, rewarding richly by their luxuriance the agricultural wealth of the Islands.

To know the real taste of any fruit, we should enjoy it upon the spot. We think we know the actual flavor of the luscious orange, the banana, the pineapple, etc., when our fruiterer's cart having delivered them at our doors, we place them in taste-

I drained the chalice to its dregs, and lo!
Before mine eyes
What He Himself, the Lord who loved me so,
For my surprise
Had hidden there with His most loving hand—
Beyond all price,
A rich and radiant jewel from the land
Of Paradise.

Most christians look forward to a *final* victory. They expect to bear the palm when this life is over; but is there any reason to wait for death to make us conquerors? Does not St. Paul say that God *giveth* us the victory? "Victory is not only a thing of to-morrow; it belongs to to-day. The christian's life is victory all along the line." We are the followers of One who reigned as King upon a cross. Could any situation be more unlike a throne? The cross was then as the gallows is now, the very symbol of shame and disgrace; yet He was as truly a conqueror then as when He rose triumphant from the grave. How simply He accepted as His right the homage of the dying thief, how kindly was the royal pardon extended to the soldiers, how grand His perfect mastery over pain, and calm refusal of the offered anodyne! The royal composure and thoughtfulness for others, in the midst of terrible pain, was the outward sign of a marvellous victory—a victory that has been the birthright of His servants ever since, although they often fail to grasp it. It has shone out in the death of countless martyrs, who have astonished the world by their fearlessness. But it belongs to

Will minister unto thee; thou shalt take
Of this communion through the solemn depths
Of the dark waters of thine agony.
With heart that praises Him, that yearns to Him
The closer for that hour. Hold fast His hand,
Though the nails pierce thine too! Take only care
Lest one drop of the sacramental wine
Be spilled, of that which ever shall unite
Thee, soul and body, to thy living Lord!"

It is easy to recognize this victory over pain and sorrow—in other people. One, who has seemed a commonplace individual enough, is terribly injured in some accident. He is suffering excruciating pain, but makes no fuss, and acts, as we say, like a hero. Is he not a conqueror? Don't we admire and respect him far more than we did before? He has not only shown himself capable of heroism, but also gained a larger store of true nobility than he possessed before. We all admit that such a crisis is a grand opportunity for strengthening and testing a man's character; but such crises are rare. Granted; but why not insist on being the victor in all the smaller trials, which are by no means rare? Every little temptation to irritability may be taken as an opportunity for an extra supply of good temper. A slight disappointment, or crossing of our own will, may be an opportunity of offering a real gift—a gift that costs us something—to our King. We may meet pain and sorrow fearlessly, and even joyfully, if we remember that by these God intends to lift us higher, more near to Himself.

"God gives us light and love, and all good things—
Richly for joy, and power, to use aright;
But then we may forget Him in His gifts—
We cannot well forget the hand that holds
And pierces us, and will not let us go,
However much we strive from under it—
The heavy pressure of a constant pain
Is it not God's own very finger-tips,
Laid on thee in a tender steadfastness?"

Look back to the past, and you will not find that the greatest gain has come out of the smoothest, easiest bits of life. Trouble, pain, hardship, struggle, are more to be valued than comfort and ease, because they bring to us richer gifts. We are strong enough, with God's help, to lead them captive as our slaves, and seize the rich treasures for our own. Patience, courage and faith, a joy that can triumph over pain, the peace that passeth all understanding, a love that can trust God even when He hurts us most, are not these worth something? You who are called to the high honor of a fellowship with Christ in suffering, will you not rouse yourself from a merely passive submission and "rejoice that you are counted worthy to suffer"? Remember that "unto you it is given in the behalf of Christ, not only to believe in Him, but also to suffer for His sake." HOPE.

THE CHILDREN'S CORNER.

A Jolly Ride.

It is very nice to be rich, no doubt, and yet to dress up in silk, velvet and feathers, and ride along in a grand carriage, is no fun at all compared with a jolly ride in a hay-cart or lumber wagon. Perhaps the best fun is to nestle cosily into the straw at the bottom of a big sleigh which jolts over the pitch-holes so delightfully on a pair of "bobs." Next best is to be one of a happy crowd of girls and boys perched insecurely on the rack of a hay-cart. What shrieks of pretended fear and peals of hearty laughter ring out! How the smallest joke is appreciated! What a hungry, happy lot of children tumble out of the wagon when the ride is over, and rush pell-mell into the house, demanding supper! The poor rich people, who have no old clothes and are too grand to ride on a hay-cart, have not half as much fun as you country boys and girls. The pair in the picture, though, do not seem anxious to be in a crowd. They evidently think that "two is company." The oxen do not demand much attention, so the young man is able to devote all his time and thoughts to his lady passenger.

Your time may come for that sort of thing, but do not be in too great a hurry. Boys used to have a wholesome contempt for what they called "spooning," but nowadays they generally start to flirt before they get their first pair of knickerbockers worn out. It certainly is a fast age; but I hope all the children in our "Corner" would rather go for a jolly ride with a crowd than dawdle sentimentally along like our friends above. C. D.

Living Lamps.

Did you ever catch fireflies, put them in a bottle, and then try to read with the light they give? We used to experiment in that way when we were children, and now clever scientific men are doing the same thing with different kinds of fireflies and glowworms. One naturalist made a lamp of these *noctiluca*, as they are called. (Get out your Latin dictionary and see what that long word means.) He put a lot of them into a tube, and kept on poking them up with a stick when they got dull. He said they gave enough light to enable him to read large print a foot or two away. Another man was able to take photographs by the light of one of these insects. They were not instantaneous photographs, certainly, but after several trials he was able to take a pretty clear one in two minutes.

Some of these phosphorescent insects are very brilliant. A German professor says they were often the means of saving his life when he was out at night in the dense forests of St. Domingo.

There is a kind of centipede that is called "*Geophilus electricus*" because its light is almost the same as the electric light. A stream of fire seems to be flashing along both sides of the creature. It is also like a comet, in leaving a fiery trail behind it. This often makes a small "milky way" for about a foot and a half over the grass.

In some countries, the ladies fasten these living diamonds in their hair when they want to be very grand.

Even the common earthworms sometimes give out a bright light. On a dark, rainy night, a man was once walking through an orange grove in California. He happened to kick aside a large lump of earth, and was astonished to see that it seemed to be on fire. As he scattered it with his foot, sparks appeared to be flying in all directions. The cause of all this illumination was a little earthworm, or possibly two. The phosphorescence had soaked out of them into the ground, for, when he

picked up a bit of earth, his hands shone for a few seconds.

We live in a very wonderful world; the real magic around us is far more marvellous than the wildest fairy tale. But it will not do for you to sit up all night studying fireflies and glowworms. If you try to do that, you may become like the lazy prince, and want to stay in bed all day. Shall I tell you about him?

Oh! the little prince loved to lie a-bed
Till any time of the day, 'tis said.
For a lazy prince was he, was he;
He'd wake, and eat, and O dear me!
Back to bed he'd go; and then
He'd sleep till twenty-seven minutes to ten.
The king was in a fearful to-do.
Said the queen: "My dear, he takes that from you."
"Tis a habit," responded the king, "I vow
That the lad must break; and soon. But how—
How to proceed. No threats avail
To make the boy his dreams curtail.
We'll ask the Lord High Chancellor of State."
They did. Up spake that man sedate.
Said he: "Despite his princely rank,
Your majesty should apply the spunk!"
They tried the plan. It failed. In truth,
Naught could arouse that sleepy youth
Till, on a morn, as the clock struck eight,
Came a huge black cat to the palace gate;
Knocked, and passed by the warden there;
Marched straight up to the great gold chair
Where the king in audience sat,
And bent the knee, like a courtly cat;
Then gazed at the king, and with never a wince,
And said: "Behold! I will cure the prince."
"And, if ye do," cried the king with delight,
"We'll grant thee a pension, and dub thee knight!"
And then—well then, 'twas well on to ten—
The prince was sleeping soundly, when
Up on the royal bed jumped the cat,
And plump on the princely chest he sat.
And Oh! such dreams as the prince then had,
Of men who were wicked, of dogs running mad—
Till the little prince cried: "O dear! I'd be glad
If I could just wake up, and get up. Oh, my!"
And the cat sat and smiled, and he winked with one eye.
And he sat till past dinner time, and long after tea.
Till the poor little prince grew so weary, that he
Made a vow: "Oh! if once I could leave this old bed
No more would I lie a-bed mornings," he said.
When, presto! Down jumped the big cat to the floor,
It was out of the palace, and ne'er was seen more.



A JOLLY RIDE.

So the king kept his pension, the prince kept his vow.
Said the queen: "He's a lad of much spirit; for how
Could he thus have conquered himself—don't you see!"
"Yes, my dear," said the king, "But he takes that from me!"

It was rather a painful cure, wasn't it? but happily the little prince only needed to take one dose. When the medicine is very disagreeable, it generally makes people try their hardest to get well, and trying is half the battle.

Cousin Dorothy.

The Secret of Success.

One day in huckleberry time, when little Johnny Flairs
And half a dozen other boys were starting with their pails
To gather berries, Johnny's pa, in talking with him, said
That he could tell how to pick so he'd come out ahead.
"First find your bush," said Johnny's pa, "and then stick to it
Till
You've picked it clean. Let those go chasing all about who
will
In search of better bushes; but it's picking tells, my son
To look at fifty bushes doesn't count like picking one."
And Johnny did as he was told, and, sure enough, he found,
By sticking to his bush while all the others chased around
In search of better picking, 'twas as his father said:
For, while all the others looked, he worked, and so came out
ahead.
And Johnny recollected this when he became a man;
And first of all he laid him out a well-determined plan.
So, while the brilliant triflers failed with all their brains and
push,
Wise, steady-going Johnny won by "sticking to his bush."
Nixon Waterman.

On a recent Sunday, in a village near Glasgow, the Salvation Army on their usual march chanced to stop in front of the house of an old woman who keeps a donkey. During their singing and music, the old "moke" looked over the fence, and began to "he haw, he haw." Its mistress, hearing the noise, rushed to the door, and loudly exclaimed: "Gae awa', ye auld fule, or they'll sune hae you as bad as theirsels."

OUR BOYS AND GIRLS' DEPARTMENT.

MY DEAR BOYS AND GIRLS,—

A few days ago, when lifting some plants for winter blooming, and putting by some of the tender bulbs from reach of Jack Frost, the question arose in my mind, how many of our ADVOCATE boys and girls have had a garden plot this year? The number is, perhaps, smaller than one might suppose, for nowadays people seem to be too busy to cultivate anything that does not bring in a return of dollars and cents, neglecting many of the easily-obtained trifles that go to make life beautiful. It does not take very much time, however, to have a couple of neat beds of flowers upon which to occasionally rest eyes that for the most part have to gaze on very commonplace objects—brooms, dust-pans, pots and pans—and how amply they repay the small care bestowed upon them, by brightening our homes within and without, to say nothing of the pleasure it is to have such sweet tokens to give our friends or to decorate our churches for special occasions.

Perhaps you think this a strange season to broach this subject, but you know the old adage says, "In times of peace prepare for war," and now that the busiest season is over, I suggest that those who have not already a garden should prepare some plots now, and have them ready for spring. Almost everyone has some generous neighbor who will give a few roots of perennials for a start. This, too, is the proper season for planting hardy bulbs for early spring flowering, such as crocus, tulips, etc., and these are very desirable, as after their season of bloom they die down, and late annuals may be transplanted into the same bed. These bulbs may now be had so cheaply that none can afford to be without them.

Now, girls, I know just all the difficulties you are likely to meet; I've had a trial. I know how depressing it is to have the calves which have been turned out to dispose of some surplus clover in the fall have the bad (or should I say refined?) taste to prefer our favorite flowers. Not even the precious roots escape, for what are not eaten are trampled out of existence. Then those precious brothers of ours are always so busy that they have not time to draw any muck or fertilizer to prepare a place for flowers. What shall we then do? This is what some girls I know did—borrowed a horse and cart and did the work themselves. The men may profess to scorn our attempts at outdoor adornment, but, at heart, there is not one of them who does not admire it, and if they allow their real thoughts expression, we will receive a few generous compliments. After a while, too, they are shamed by our efforts, and will turn in and help, and then—why, it's all plain sailing.

Remember, you may have to cultivate in those about you the love of the beautiful, as well as your garden; but "soon or late, to all who sow, the time of harvest shall be given," and all seasons suit for planting this particular variety of seed. Do not wait until spring to think about what you mean to

have, but get a reliable catalogue during winter; make your selection, and order early. By dealing direct with the seedsmen, you have a better choice, and save from 15 to 25 cents on a \$1 order, and most of them give a packet or two extra besides. Many of the dealers put up collections of the favorite annuals at from 25 cents upwards, and, for amateurs, these are, perhaps, the best investments. It is a wise precaution to secure a couple of boxes of earth in the fall, that you may start your seeds indoors in March, and have thrifty plants ready for setting out when the ground is ready.

"Though you may not lead an army or receive a nation's praise
You can show your love of country in many other ways,
And not go far to do it; you needn't even roam,
But just by making beautiful the place you call your home."

My small experience in gardening has been gleaned from repeated trials, and if it be of benefit to any, I shall be happy to answer to the best of my ability any questions my readers choose to ask.

The contest intended for this issue is considered rather late, but we shall have others later on. Where's your Xmas poetry? ADA ARMAND.

A Puzzled Irishman.

Mr. O'Flaherty undertook to tell how many were at a party—"The two Crogans was one, meself was two, Mike Fenn was three, and—and—who the duce was four? Let me see" (counting on his fingers)—"the two Crogans was one, Mike Fenn was two, meself was three—and, bedad! there was four of us, but St. Patrick couldn't tell the name of the other. Now, it's meself that has it, Mike Fenn was one, the two Crogans was two, meself was three—and—and by my sowl, I think there was but three of us after all."

Opportunities in Canadian Farming.

In a recent issue of the *Saturday Evening Post*, Hon. James Wilson, the United States Secretary of Agriculture, discussed farming as a business for young men. In the main, his observations are applicable to the Dominion of Canada as to the Republic, barring the raising of a few such specialties as oranges, pineapples, rice and cotton. From fruit-raising on the one hand to animal husbandry on the other, farming is becoming more and more a highly specialized industry, though the majority of farms in Eastern Canada are yet run on a general-purpose plan; and under the conditions which have prevailed, it has been the natural and safer course; but the tendency is now in the other direction.

Throughout the Great West, the specialty is wheat, and horses, cattle and sheep on the ranges. Here and there dairying has a foothold, and it is truly a specialty of Ontario, Quebec, and the Maritime Provinces. It is subdivided into the sale of whole milk in cities and towns, milk for cheese and condensing factories and creameries, and the sale of cream, said to be one of the most profitable of all the ways of handling milk, where the conditions are right. As a running mate with cheese, the specialty that has given Canada as great and as substantial fame throughout the world as any, has been that of her studs, herds and flocks of pure-bred animals, established and maintained for the rearing of improved animals for breeding purposes. This is a specialty demanding for its successful prosecution a high degree of intelligence and skill, foresight and business enterprise. Its outlook was never so favorable as at the present time.

Feeding beef cattle for the home or British market is a special line on many farms, and one deserving of greater attention than it has been receiving of recent years. In conjunction especially with dairying, the bacon-hog industry has rapidly come to the front as one of the most profitable branches of Canadian agriculture.

In the Maritime Provinces, portions of Quebec, Ontario, and British Columbia, fruit-raising has become a most flourishing specialty, the natural conditions being so favorable for developing the finest quality of all the staple and more fancy fruits of the temperate zone. Refrigeration and cold storage are solving the problems of transportation

and markets. In conjunction with this industry has grown up the nursery business, which must supply the young fruit trees and plants and stock for ornamental purposes, evergreen and shade trees. Another and a most fascinating branch of horticulture is, the growing of flowers for sale, which the advancing taste of civilization demands in greater quantities and more beautiful forms. Truck farming or market gardening is another rapidly-developing industry that is absorbing large areas near cities and towns, and by means of indoor culture, and irrigation, is being spread over all the year to meet the ever-increasing demands of the fastidious tables of our prosperous cities and towns.

In several sections, bean-growing is a specialty, and tobacco with a few others. Sugar-beet culture is in the experimental stage, but will probably push itself successfully to the front. The growing of fruits, vegetables and poultry for canning factories has become in recent years a most important industry, owing to the great modern demand for foods in these convenient forms. Especially in parts of Nova Scotia, cranberry culture on low-lying lands is a profitable specialty.

Poultry-rearing for flesh and eggs is making wonderful strides on farms all over Canada, and it has given a great impetus to the raising and sale of pure-bred fowls for breeding purposes, the needs of the day having sealed the doom of the mongrel-bred rooster and his scrub mate.

Beekeeping flourishes from one end of Canada to the other with those who have given it the necessary care and attention, and its value arises not only from its direct and handsome return for honey and wax, but indirectly as an aid to horticulture by pollination.

From the foregoing, which is but an incomplete list of branches of farming successfully carried on in Canada—some as true specialties, others as part of a system of general farming—it is quite apparent that our young men can find ample scope for a variety of tastes and all the energy they have at command, and they cannot find upon the old globe a land where the general conditions are as favorable as they are here. Some persons will say that there are failures among Canadian farmers. Granted; but the probabilities are that they would have succeeded no better in any other calling, and it is unquestionably true that the percentage of failures among farmers is very small, compared

with the failures among merchants. Among the reasons for want of success has been the lack of observing ordinary business principles in farming, and another, the failure to maintain a uniformly high standard of animals or products sold. In no occupation is a well-directed education more important than in farming, not only as an aid in the purely commercial side, but in knowledge of the soil and methods of cultivation, maintenance and restoration of fertility, breeds of live stock, and feeding, knowledge of plants and insects and their enemies, along with scores of other technical points which are all the time becoming more essential in order to success. Unfortunately, very many farmers do not hold their own business in sufficiently high esteem. Familiarity has bred for it a sort of easy contempt. They are inclining to trust to luck, and instead of seizing every reasonable aid to rear high-class animals and products at a profit, are content to jog along in the old rut and learn by slow experience. Experience is doubtless a good teacher, but it may be dear bought and involve the waste of precious years. In these days, when knowledge on all these subjects and its dissemination have so wonderfully increased, the wise man will keep an eye on the future, and profit by the experience of others who have been or are still operating in the same sphere of labor.

Why Colostrum Coagulates.

The peculiar coagulative property possessed by the milk of newly-calved cows is due to the presence in it of an exceptionally high percentage of albumen. In ordinary milk the percentage of albuminous matter, as represented by casein, averages about 3 1/2 per cent., whereas in the milk of freshly-calved cows the albuminoids, as represented by casein and albumen, amounts to from 15 to 20 per cent. The quantity of this albumen present greatly diminishes with each milking, until from three to four or six days after calving it has quite disappeared, and the milk assumes its normal composition. The presence of this high percentage of albuminous matter does not seem to exercise any material influence upon the quantity of butter-fat present, because the milk of newly-calved cows gives an average of practically the same quantity of butter-fat as that of the same cow some weeks subsequently.

GOSSIP.

Mr. H. A. Chadwick, the well-known breeder of poultry, St. James, Manitoba, has decided in future to go in for the breeding of Plymouth Rocks exclusively, and therefore offers in his advertisement elsewhere in this issue the large stock of different breeds he keeps besides Plymouth Rocks. He will sell these birds at reasonable prices or will exchange them for high-class Plymouth Rocks. The different breeds he offers for sale are specified in the advertisement, and as they are either prizewinners or from prizewinning stock, anyone desiring these breeds should correspond with Mr. Chadwick at once.

JOHN ISAAC'S GREAT SALE OF SHORTHORNS

The advertisement in this issue of the dispersal sale, to take place on December 18th, of the entire Kinellar Lodge herd of Scotch-bred Shorthorns of Mr. John Isaac, of Markham Ontario, foreshadows one of the most interesting events to Shorthorn breeders of this eventful year. The announcement of the dispersal will be received with regret by all who know the man, when it is learned that the condition of his health is the cause of Mr. Isaac's decision to seek relief from the cares of business for the present at least, and all will wish him a speedy and complete recovery. Quiet and unpretentious, yet affable and amiable, few men in the business have more friends who wish him well, and none a more honorable record as an upright business man, and few, if any, have imported and bred as many high-class Shorthorns. Closely related to that excellent and eminent Scotch breeder, the late Mr. Sylvester Campbell, of Kinellar, whose cattle and their descendants have won more prizes in Canada than those of any other British breeder in the last twenty-five years, Mr. Isaac some twenty years ago commenced to import selections from that noted herd, and in a quiet way bred and sold at moderate prices useful cattle, which, in the hands of more ambitious men, have themselves and their produce figured among the most successful prizewinners at national and international exhibitions, bringing honor and fame to Canada as a stock-producing country. During the darkest days of the business depression experienced in the early years of the past decade, when cattle were low and difficult to sell, Mr. Isaac, without effort, readily disposed of such as he had to spare at fairly good prices, because it was known that he kept only good ones and could be depended on to fairly represent them. When the depression began to lift and the obnoxious quarantine regulations which had rendered importations impracticable, seeing the urgent need for new blood in Canadian herds, Mr. Isaac was the first with courage sufficient to brave the risk of making an importation of young bulls, and his spirit of enterprise was met with hearty appreciation by the breeders of the country, who rallied round him and paid him good prices at the public disposal of that importation. Since that time he has made several importations of high-class cattle, and when the attack of illness came which led to the decision to give up business, he had in quarantine an importation of 11 head of Scotch-bred cattle, which are said by those who have seen them to be one of the very best lots that have been brought out in recent years, having been selected for him by a son of the late Mr. Campbell, of Kinellar, who knows good ones and where to get them. This entire importa-

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The fence that fences—Cheap and lasts a lifetime—
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To learn the blacksmith and machinist business, in one of the best and most comfortable shops in the Province. Must be a good strong fellow of good habits. Apply to

J. SULLIVAN, EMERSON, MAN.

tion, together with the select little herd at Kinellar Lodge Farm, are included in the sale list to be sold without reserve. The offering, as indicated in the advertisement, comprises representatives of many of the most popular families of Scotch Shorthorns, all being young or in the prime of life, a large proportion being young cows and heifers that have been bred to high-class bulls in Scotland and whose calves will therefore rank as imported animals, while the half-dozen imported bulls should readily find places in Canadian herds where they may prove useful in improving the stock of the country. The great demand for Shorthorns this year, and the many which have gone out of the country, will doubtless have had the effect of leaving some empty stalls in the stables of many breeders, which may well and profitably be filled by selections from this sale of good ones. We do not expect to see fancy prices realized, as the cattle have not been highly fitted for show purposes, being in just good, thrifty, breeding condition, the best possible for the buyer, and we hope to see the most of them remain in the Dominion, where they are certainly needed. The catalogue now in course of preparation will be ready for mailing in a few days, and we advise all interested to make application for it and keep the date of the sale in view. In our next issue we hope to give a review of the animals listed, and of their breeding.

Small & Sons, breeders of Berkshire hogs, Sudbourn, Ont., make a change in their advertisement in this issue which parties interested will do well to notice. The hog is much in evidence in Canadian farming interests at the present time, and the best type of Berkshires ranks high as a profitable producer of the highest quality of bacon and hams.

IN WRITING
PLEASE MENTION FARMER'S ADVOCATE.

"WHEN BUYING, WHY NOT GET THE BEST?"



Mikado Cream Separators

EXCEL ALL OTHERS
IN EASE OF RUNNING,
CLEAN SKIMMING,
AND SIMPLICITY OF
CONSTRUCTION.

The Manitoba Cream Separator Co., Ltd.,
151 BANNATYNE AVE., WINNIPEG, MAN.

The Ontario Wind Engine and Pump Co., Ltd., Toronto, manufacturers of the Canadian Airmotor, have been favored with an order for four irrigation Airmotors complete for the British Government. This is not the first consignment that they have supplied to Her Majesty's Government. The others have proved so satisfactory that this order is only a natural consequence.

A Successful Season.—The Brandon Creamery Co. has recently issued a circular letter to their patrons, stating that for the present season, up to October 1st, they had made 125,616 pounds of butter. They expect to keep the factory running well into the winter. The prices paid to patrons for the season have been: April, 18 cents; May, 15 cents; June, 14 cents; July, 15 cents; August, 16 cents; September, 16 and 17 cents; October, 17 and 18 cents.

J. E. SMITH
Has received from Ontario a shipment of twelve Shorthorn bulls, which are for sale. Also for sale a number of home-bred heifers, sired by Lord Stanley II. = 2220 =, and supposed to be in calf to Golden Measure (imp.) (7215) = 2667 =.



Clydesdales and Shorthorns.
Young stallions, bulls, and heifers.
Herd headed by Best Yet 11371 and Miniborn 2484—, bulls bred by Hon. John Dryden and H. Carzella Son, owners of Appleton.
D. McBeth,
Oak Lake, Manitoba

For sale, a number of Clydesdale mares and fillies, all registered; will be served by Prince Charles imp. All animals for sale, except the stock bulls, Lord Stanley II. = 2220 = and Golden Measure (imp.) (7215) = 2667 =, and the Clydesdale stallion, Prince Charles (imp.). These, being the best that money and experience could buy, are required to maintain the high reputation of the stock of the Bessford and Smithfield Farms. Come and see the stock, or write for what you want, to
J. E. SMITH,
P. O. Box 274, Smithfield Ave., BRANDON.

Our Farmer's Library

A RECENT bulletin prepared by Prof. J. B. Reynolds, of the Ontario Agricultural College, gives a list of meritorious books on Agriculture, Live Stock, Dairying, and Fruit Growing, from which we have made a selection and added a few others. How to obtain, see below:

SOIL AND CROP.

- THE FERTILITY OF THE LAND.—*Roberts*. 372 pages. \$1.25.
- A BOOK ON SILAGE.—*Wall*. 185 pages. \$1.00.
- SOILS AND CROPS.—*Morrow & Hunt*. \$1.00.
- FORAGE CROPS.—*Thos. Shaw*. \$1.00.
- SOILING, ENSILAGE, AND BARN CONSTRUCTION.—*F. S. Peck*. 247 pages. \$1.00.

LIVE STOCK.

- THE STUDY OF BREEDS (CATTLE, SHEEP, AND SWINE).—*Prof. Shaw*. 400 pages; 60 engravings. \$1.50.
- HORSE BREEDING.—*Sanders*. 422 pages. \$1.50.
- LIGHT HORSES—BREEDS AND MANAGEMENT. 226 pages. \$1.00.
- HEAVY HORSES—BREEDS AND MANAGEMENT. 219 pages. \$1.00.
- CATTLE—BREEDS AND MANAGEMENT. 270 pages. \$1.00.
- SHEEP—BREEDS AND MANAGEMENT. 232 pages. \$1.00.
- CATTLE BREEDING.—*Warfield*. 386 pages. \$2.00.
- THE DOMESTIC SHEEP.—*Stewart*. 371 pages. \$1.75.
- THE SHEEP.—*Rushworth*. 496 pages. \$1.50.
- PIGS—BREEDS AND MANAGEMENT.—*Sanders Spencer*. 175 pages. \$1.00.
- FEEDS AND FEEDING.—*Henry*. 600 pages. \$2.00.

GENERAL AGRICULTURE.

- AGRICULTURE.—*C. C. James*. 200 pages. 30 cents.
- FIRST PRINCIPLES OF AGRICULTURE.—*Voorhees*. 207 pages. \$1.00.
- AGRICULTURE.—*Storer*. 1,875 pages, in three volumes. \$5.00.
- CHEMISTRY OF THE FARM.—*Warrington*. 183 pages. 90 cents.
- FARMYARD MANURE.—*Aikman*. 65 pages. 50 cents.
- BARN BUILDING.—*Sanders*. 280 pages. \$2.00.
- IRRIGATION AND DRAINAGE.—*King*. 502 pages. \$1.50.
- IRRIGATION FOR THE FARM GARDEN AND ORCHARD.—*Henry Stewart*. \$1.00.
- SUCCESSFUL FARMING.—*Rennie*. 300 pages. \$1.50, postpaid.

DAIRYING.

- AMERICAN DAIRYING.—*H. B. Gurler*. 252 pages. \$1.00.
- THE BOOK OF THE DAIRY.—*Fleischmann*. 330 pages. \$2.75.
- MILK AND ITS PRODUCTS.—*Wing*. 230 pages. \$1.00.
- TESTING MILK AND ITS PRODUCTS.—*Farrington & Wall*. 255 pages. \$1.00.

POULTRY.

- ARTIFICIAL INCUBATING AND BROODING.—*Cypher*. 146 pages. 50 cents.
- PRACTICAL POULTRY-KEEPER.—*Wright*. \$2.00.

APIARY.

- THE HONEYBEE.—*Langstroth*. 521 pages. \$1.40.

FRUIT, FLOWERS, AND VEGETABLES.

- VEGETABLE GARDENING.—*Green*. 224 pages. \$1.25.
- FLOWERS AND HOW TO GROW THEM.—*Roxford*. 175 pages. 50 cents.
- THE PRINCIPLES OF FRUIT-GROWING.—*Bailey*. 514 pages. \$1.25.
- BUSH FRUITS.—*Card*. 537 pages. \$1.50.
- HORTICULTURIST'S RULE BOOK.—*Bailey*. 312 pages. 75 cents.
- SPRAYING OF PLANTS.—*Lodeman*. 330 pages. \$1.00.
- THE NURSERY BOOK.—*Bailey*. 365 pages; 152 illustrations. \$1.00.
- AMATEUR FRUIT-GROWING.—*Samuel B. Green*. 587 pages; 131 pages, with numerous fly leaves for notes; bound in cloth, and illustrated. 50 cents.

PLANT AND ANIMAL LIFE.

- THE STORY OF THE PLANTS.—*Grant Allen*. 213 pages. 40 cents.
- THE STUDY OF ANIMAL LIFE.—*J. A. Thomson*. 375 pages. \$1.75.
- INSECTS INJURIOUS TO FRUITS.—*Saunders*. 436 pages. \$2.00.

HOW TO OBTAIN THESE BOOKS:

We will furnish present subscribers any of the above books as premiums for obtaining new yearly subscribers to the FARMER'S ADVOCATE, at \$1.00 each, according to the following scale:

Books valued at from	\$0.30 to \$0.65,	for 1 new subscriber.
"	.90 to 1.25,	for 2 "
"	1.50 to 1.75,	for 3 "
"	2.00 to 2.50,	for 4 "
"	2.75	for 5 "
"	5.00	for 9 "

We can furnish any of the above books at the regular retail price, which is given opposite the title of the book. By a careful study of the above list, any farmer can choose a select list of books suited to his needs, and for a small outlay in cash, or effort in obtaining new subscribers for the ADVOCATE, secure the nucleus of a useful library.

Cash to accompany names in every case. \$1.00 pays each new subscription from now to end of 1901.

The WILLIAM WELD CO., Ltd., WINNIPEG, MAN.

Want a Good Watch?

WE have succeeded in procuring from one of the most reliable jewelers in Canada a complete list of Gents' and Ladies' Watches of sufficient variety to suit every one, and have no hesitation in recommending them to our readers as premiums worthy of an effort to secure. These are not by any means the same class of goods as are hawked around fair grounds, but first-class in every particular, and we assure you that you will be pleased with whatever of the above premiums you may obtain. Let us hear from you at an early date with a good list of new subscribers accompanied by the cash, and take your choice.

Gents' Watches.

No.	Description	New Subscribers.
No. 1.	Yankee Nickel Watch	2
No. 2.	Trump Nickel Watch	4
No. 3.	Trump Gun Metal Watch	5
No. 4.	No. 14 Silver Watch	8
No. 5.	7 Jeweled Gent's Elgin in 3 oz. Nickel Case	10
No. 6.	7 Jeweled Gent's Elgin in Gun Metal Case	11
No. 7.	7 Jeweled Gent's Elgin in Sterling Silver Case	14
No. 8.	7 Jeweled Gent's Elgin in 20-year Filled Case	18
No. 9.	7 Jeweled Gent's Elgin in 25-year Filled Case	21
No. 10.	15 Jeweled Gent's Elgin in 3 oz. Nickel Case	15
No. 11.	15 Jeweled Gent's Elgin in Gun Metal Case	15
No. 12.	15 Jeweled Gent's Elgin in Sterling Silver Case	18
No. 13.	15 Jeweled Gent's Elgin in 20-year Filled Case	21
No. 14.	15 Jeweled Gent's Elgin in 25-year Filled Case	25

Ladies' Watches.

No.	Description	New Subscribers.
No. 15.	Gun Metal Swiss Chatelaine	4
No. 16.	Sterling Silver Swiss Chatelaine	5
No. 17.	Nickel American O. F., large size	5
No. 18.	Gun Metal American O. F., large size	5
No. 19.	Nickel, small size	9
No. 20.	Gun Metal, small size	10
No. 21.	Sterling Silver, small size	10
No. 22.	7 Jeweled Elgin in 20-year Filled Hunting Case	20
No. 23.	7 Jeweled Elgin in 25-year Filled Hunting Case	22
No. 24.	15 Jeweled Elgin in 20-year Filled Hunting Case	23
No. 25.	15 Jeweled Elgin in 25-year Filled Hunting Case	25

Description of Watches.

The accompanying cuts fairly well represent all the Ladies' and Gents' Watches, and a description of each as numbered is as follows:

No. 1. American Nickel Key-wind Boy's Watch that is absolutely guaranteed to keep good time and give satisfaction.

No. 2. Gent's Nickel American O. F. Watch; stem wind, and push-in stem and turn to set hands. This is a very strong, reliable Watch.

No. 3. Same as No. 2, excepting that it has Gun Metal case instead of Nickel case.

No. 4. Is a smaller-sized Gent's Watch, has sterling silver case, O. F. Screw Back and Bezel; stem wind, and push-in stem and turn to set hands. This is the lowest-priced and most reliable Boy's or small Gent's Silver Watch that is on the market.

No. 5. Is fitted with 7-Jeweled Nickel, first-quality Elgin movement. The case is a 3-oz. O. F. Nickel case; stem wind and set; screw back and bezel case.

No. 6. Same movement in Gun Metal or Black Steel screw back and bezel case.

No. 7. Same movement with Sterling Silver O. F. screw back and bezel case.

No. 8. Same movement in 20-year guaranteed Gold Filled O. F. screw back and bezel case.

No. 9. Same movement in 25-year guaranteed Gold Filled O. F. screw back and bezel case.

Nos. 10, 11, 12, 13 and 14 are fitted in the same style of cases as Nos. 5, 6, 7, 8 and 9; the difference is in the movement, and the movement is 15-Jeweled Nickel, first-quality Elgin movement.

No. 15. Is a small-sized Swiss O. F. Gun Metal Chatelaine Watch.

No. 16. Is the same, only with Sterling Silver case, which can be had nicely engraved.

Nos. 17 and 18 are a good-quality American Watch, O. F. stem wind, and push-in stem and turn to set hands. These are a little larger than the usual Ladies' Watches, and are smaller than the usual Boys' Watches, though can be used for either Boys, Girls or Young Ladies.

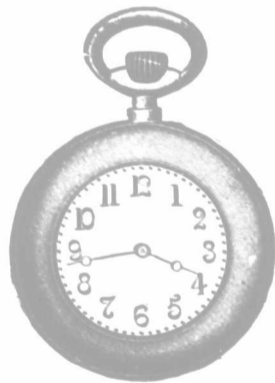
Nos. 19, 20 and 21 are small sized; in fact, are the exact size of cut. These are American Watches, O. F. stem wind, and push-in stem and turn to set hands, and are first-class timekeepers. Will give perfect satisfaction.

If a nice leather wrist case is desired with these watches, send two extra subscribers.

Nos. 22, 23, 24 and 25 are similar to the accompanying cut. These are regular Ladies' Hunting Watches. Nos. 22 and 24 are fitted in 20-year guaranteed Gold Filled cases, nicely ornamented, or to be had in plain or plain engine turned, and the same applies to Nos. 23 and 25, excepting that they are fitted in 25-year guaranteed Gold Filled cases, and 14K Gold Filled; 22 and 23 are fitted with 7-Jeweled Nickel, first-quality Elgin movements. Nos. 24 and 25 are fitted with 15-Jeweled Nickel, first-quality Elgin movements.

When making your choice of Watch as premium, be sure to mention its number as given in premium list, also whether Lady's or Gent's.

The Wm. Weld Co., Ltd., Winnipeg, Man.



GOSSIP.

Harry Tindall, Neepawa, has recently purchased from the Wisconsin Experiment Station a Yorkshire sow. She was bred from Brethour stock.

H. O. Aycerst, Madill Church, recently sold, through Wm. Sharman his prizewinning white yearling Shorthorn bull, Sirdar, to O. H. Smith, of Buffalo Lake, northern Alberta, this being the second bull Mr. Smith has purchased from Mr. Aycerst to head his herd.

The Winnipeg Poultry Association has arranged to hold a series of meetings during the winter months for the discussion of poultry matters. On November 17th, A. G. Gilbert, manager of the poultry department at the Experimental Farm, Ottawa, will deliver an address on poultry matters that should be of interest to all breeders. The annual meeting of the Association is announced for January 7th.

Kenneth Melvor, Roselea Stock Farm, Virden (the Melvor of rye grass fame), called at this office recently on his way home from a bull-purchasing trip. He succeeded in getting what he wanted to head his Shorthorn herd, in a promising calf from Mr. Greenway's Prairie Home herd, at Crystal City. The calf is by Golden Measure (imp.) and out of a heifer of John Isaac's breeding.

In this issue appears a photo-engraving of the Shire stallion, Grove Ringmaster [292], by imp. Grove Ringleader (1134), out of imp. Jessica (10182), by Jerico Hero 2nd. This horse is owned by Mr. J. T. Munroe, Neepawa. He has won many prizes at the Winnipeg Industrial and local shows, is a sure and successful stock horse, his colts having won prizes in strong competition.

Selections of Shorthorns from three Iowa herds were sold at Oskaloosa, Ia., October 11th. The breeding of the animals was mixed and miscellaneous, but the individuals generally of good merit, and those of good old American families, such as Phyllises, Young Marys, and Roses of Sharon, were in good demand at fair prices, while Bates cattle outsold the Scotch, a Bates bull bringing \$700, and two others \$500 each. The highest price for a female was \$335, for a Bates Wild Eyes. Mr. Wilhoit's 12 head sold for an average of \$283, and those of the other herds for \$163 and \$154 respectively. The average on the 56 head sold was \$185.

Messrs. A. & G. Mutch, of Lumsden, Assa., are gathering together some fine types as foundation stock at their "Craigie Mains" Clydesdale Stud. Some 40 horses of various ages, and all of Clyde breeding, constitute the horse stock. Six or eight are registered Clydes, including the grand old mare, Miss Cameron, and the two Lord Charming fillies of D. & O. Sorby's breeding, imported last summer, and shown at the Winnipeg Industrial. Also a fine filly bred by J. A. Turner, Millarville, Alta. At the head of the stud is the grand colt, Stanley Prince, by Sorby's Grandeur. He is thickening up wonderfully, and has the fine, broad, intelligent head of his grandam, Lily McGregor, with a well-sprung, deep rib, and great, wide, smooth quarters, and legs and feet of the best. He is growing into a horse that will make the best of them look to their laurels. The Messrs. Mutch make a speciality of supplying Clyde-bred work horses of the very highest type.

Wm. Mey, of Niverville, has secured the services of George Craigas manager of his large farm, and intends going more extensively into stock, particularly dairying and hog-raising. He already has a number of pure-bred Berkshires and Yorkshires, purchased from Mr. Greenway's herd at Crystal City. Geo. Craig has for a number of years been in charge of the live-stock department at the Minnesota Experiment Station, under Prof. Thos. Shaw, and previous to that was stockman at the Brandon Experimental Farm. His friends in Manitoba will welcome him back again, and wish him well in his new position. He takes hold early in the new year, after the Chicago Fat Stock Show, for which he is fitting a number of entries in cattle, sheep, and hogs.

J. A. Turner, Balgreggan Ranch, Millarville, Alta., has recently sold the 1st-prize shearing Shropshire ram at the Calgary Fair to C. J. Richards, manager of Lord Aberdeen's Coldstream Ranch, Vernon, B. C., for use in his flock of pure-breds. This ram also won 1st-prize and diploma for best ram, any age or breed, at the Calgary Fair in 1899. The 1st- and 2nd-prize ram lambs were sold to D. H. Andrews, manager of the C. A. C. C. ranch at Crane Lake. Mr. Turner, while judging stock at fairs up the Yorkton branch, visited the herds of Bennie Bros., Jos. Dreggan, and Jas. Mitchell, at Castleberry, and purchased a yearling bull from Bennie Bros., from his Knight of Lancaster, out of his best cow, bred by W. C. Edwards, M. P., Rockland, Ont.; also two heifers of the Ury family, from Jos. Dreggan, of exceptional merit. Mr. Turner reports his Clydesdales in fine condition this fall, and says the demand for good things is stronger than for many years.

NOTICES.

The Melotte Separator Co. Notice appears in the Manitoba Gazette of recent issue of application for incorporation of the Melotte Cream Separator Co., Ltd. The directors of the Company are M. E. Harris and J. A. Sanderson, of Brantford, Ont.; E. A. Mott, manager of the Cook-shutt Flow Co.; D. J. Taylor, traveller for the same Company, Winnipeg; F. B. Smith and C. C. Macdonald, of Winnipeg. This Company has secured the sole agency for Manitoba and the Territories for the Melotte Cream Separator, having completed an arrangement with the E. A. Lister Co., of Dursley, England. The Company will also handle a full line of dairy supplies.

Mr. Wm. Scott, manager for E. A. Lister & Co., Ltd., during the last four years, is taking over the company's butter and dairy supply business, which he will continue at his new address, 207 Pacific Avenue, corner of Main Street, Winnipeg. He will also handle the Melotte Cream Separator, and will be glad to receive orders for the same. He will also handle a full line of dairy supplies.

Elgin Watches
measure the flight of time with an erring accuracy. Perfectly adapted to the rougher usage of the mechanic and the farmer as well as the gentler handling of the lady of fashion. They come in various sizes and patterns to suit everyone. Sold by Jewelers everywhere.
An Elgin Watch always has the word "Elgin" engraved on the works—fully guaranteed.
Send for free booklet.
ELGIN NATIONAL WATCH CO. ELGIN, ILL.

POPLAR GROVE HEREFORDS
THE LARGEST HERD IN CANADA.
STOCK OF ALL AGES FOR SALE.
J. E. MARPLES, DELEAU, MAN.

For
Galloways
APPLY TO
T. M. CAMPBELL,
Hope Farm, St. Jean Baptiste, Manitoba.

PIONEER HERD OF SHORTHORNS
Won the gold medal at the last Winnipeg Industrial Exhibition; also first for bull and two of his get, first for cow and two of her progeny, and numerous prizes for individuals. They were bred right here, and I can usually show a few generations of their ancestors, and am always pleased to show them.
WALTER LYNCH, Westbourne, Man. P. O., Railway and Telegraph.

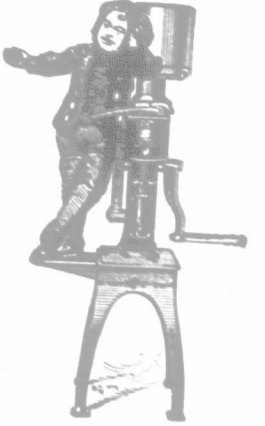
"PRAIRIE HOME STOCK FARM."
Bulls at head of herd:
Judge 23419 and Imp. Jubilee 28858.

Yorkshire and Berkshire Swine, Clydesdale Stallions and Shropshire Sheep, Shorthorn and Ayrshire Cattle.
THOS. GREENWAY, Proprietor, m
JAMES YULE, Manager, Crystal City.

SHORTHORNS & COTSWOLDS.
The proper kind bred and kept on our farm. Good stock for sale at easy prices. Rams for sale, and fine yearling bull still here. Also bull calves.
D. HYSOP & SON, Box 492, Killarney, Man.

D. FRASER & SONS,
ELBORN, MAN.
The proper kind bred and kept on our farm. Good stock for sale at easy prices. Rams for sale, and fine yearling bull still here. Also bull calves.
D. HYSOP & SON, Box 492, Killarney, Man.

The De Laval Cream Separators



HAVE just been awarded the Grand Prize by the International Jury of Awards at the Paris Exposition, over many separator exhibits from various Countries, the De Laval superiority being unquestionable in every material respect.

For circulars, prices, etc., write or call on

Canadian Dairy Supply Co.,
236 KING ST. WINNIPEG, MAN.

SHORTHORNS, YORKSHIRES AND TAMWORTHS.
Stock of all ages and both sexes, at prices according to quality. Auction sales of farm stock undertaken. Improved farm and wild lands for sale in the Winnipeg district. Correspondence solicited.
W. G. STYLES,
Sec. 12-13-1, West, Rosser P. O., C. P. R.

FOREST HOME FARM SHORTHORNS
Cows and heifers, prizewinners at Winnipeg and Brandon Fairs, and others equally good. Yorkshire pigs—a few choice ones of both sexes. R. P. Rock Cockerels—large, strong, well-marked birds. First orders received get the choice.
Carman, C. P. R. Roland, N. P. R.
ANDREW GRAHAM,
Pomeroy, Man.

SHORTHORNS
Masterpiece = 23750—by imp. Grand Sweep, out of an Indian Chief dam, at head of herd. Imp. Large Yorkshires for sale.
JAMES BRAY,
LONGBURN, MAN.

Shorthorns and Berkshires.
BREEDING AND QUALITY RIGHT.
Write or call for prices.
3 nice young bulls for sale now.
R. L. LANG, Spruce Bank Farm, OAK LAKE, MAN.

THORNDALE STOCK FARM, MANITOU.
JOHN S. ROBSON, PROP.
SHORTHORNS
Females of all ages FOR SALE.
Write for particulars.

LAKE VIEW RANCH Herefords and Galloways
Young bulls for sale. For prices write
J. P. D. Van Veen, FILE HILLS P.O., N.-W. T.

JERSEY BULLS
2 high-class Jersey Bulls for sale. Also farm lands.
H. R. KEYES, 4-y-m Midway, Man.

MAPLE GROVE FARM.
High-class Shropshires, Rams and Ewe Lambs for Sale.
My sheep are stock bred by John Campbell and James & Sons, the noted Ontario breeders. Won 1st prize at the 10th Session of Winnipeg this year.
D. F. CORBETT, SWAN LAKE, MAN.

Roxey Stock Farm, BRANDON, MAN.
J. A. S. MACMILLAN,
IMPORTER AND BREEDER OF PURE-BRED
Clydesdales, Shires, Hackneys.
STALLIONS AND MARES.

Shorthorn Cattle

Shropshire Sheep
INSPECTION INVITED.
CORRESPONDENCE SOLICITED. Prices Right.
TERMS EASY.
FULL PARTICULARS ON APPLICATION.
APPLY P. O. BOX 403.

LEICESTERS!
Young rams and ewes for sale. Write or call on
A. D. GAMLEY,
Box 193. BRANDON, MANITOBA.

Hensall Farm Berkshires
Good Pigs of all ages FOR SALE by
Elder Bros.,
Hensall Farm, Virden, Man.

Yorkshires
15 spring boars and 20 sows for sale; also two litters just farrowed, from the sweepstakes sow and first-prize sow under 2 years at Winnipeg and Brandon.
WAWANESA, MAN. KING BROTHERS.

THREE BULLS
Fit for service, the best I ever offered, for sale. Also some fine two-year-old and year-old heifers.
GEORGE RANKIN, Hamiota, Man.


LEICESTER RAMS
FOR SALE: Of first-class breeding, including Winnipeg Industrial diploma ram. Apply to
DUNCAN SINCLAIR, Oakville, Man.

BLACK MINORCAS.
Young stock for sale—some beauties. Satisfaction guaranteed.
A. M. ROBERTSON, CALEDONIA, ONT.

Norwood Bridge Poultry Yards.
Houdans, White Plymouth Rocks, White Wyandottes, Bronze Turkeys, and Pekin Ducks.
Stock from my prizewinning birds for sale. First-class stock. For dealing. Reasonable prices.
JOSEPH WILDING, Proprietor,
Norwood Bridge, Winnipeg, Man.

KENDALL'S...

SPAVIN CURE



The old reliable remedy for Spavins, Ringbones, Spitts, Curbs and all forms of Lameness. It cures without a blister because it does not blister.

North Easton, Ont., Feb. 10, '98.
 Dr. R. J. Kendall Co.
 Dear Sirs—Will you please give me a remedy for heaves. I have a mare that is afflicted. It takes pleasure in stating that I have cured a curb of four years' standing with your Kendall's Blisters, by using it only once and then applying your Spavin Cure. As long as I have horses, I will not be without Kendall's Spavin Cure and Kendall's Blisters in my stable.

Very truly yours,
 ADOLPHUS GAUTHIER.
 Price 50c. Six for \$2.50. As a liniment for family use it has no equal. Ask your druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the Book free, or address
DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

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QUICKEST AND BEST ROUTE.

Sleeping Cars to **TORONTO, MONTREAL and BOSTON.**

TO THE WEST

THROUGH CARS TO

SEATTLE; VANCOUVER;
 also to the **KOOTENAY.**

Excursion rates to California, Honolulu, Japan and all Winter Resorts.

If you have in mind a trip to the Old Country, apply for rates and all particulars to the nearest C. P. R. agent, or write

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Local passenger rates in Manitoba, 3 cents per mile, 1000-Mile Ticket Books at 2¢ per mile. On sale by all agents.

The new Transcontinental Train, "North Coast Limited," the finest train in America, is being inaugurated, making two daily trips east and west.

J. T. McKENNEY, Gen. Passenger Agent, Winnipeg.
 H. SWINFIELD, Gen. Agent, W. & N. Div.
 CHAS. E. FEE, C. & N. Div.

Blackleg is one of these peculiar diseases, caused by germs, that break out suddenly in unexpected quarters, oftentimes proving fatal to large numbers, and then disappearing as suddenly as it came. In districts where it has once made its appearance, it is liable to recur at almost any season. The soil where animals have died consequently becomes inoculated with the germs, as also does water, and the spores may thus be taken into the animal system, or the animal become inoculated through scratches or wounds in the skin. Modern science has discovered preventives with which to inoculate healthy animals that may be exposed to the contagion in the same way that the human family can be vaccinated to ward off attacks of smallpox, etc. In vaccinating animals with the blackleg vaccine, the labor connected with the work is perhaps the most extensive part of the operation. It is therefore important that only thoroughly reliable material be used. The large firm of manufacturing chemists at Detroit, the Parke, Davis Co., whose Canadian office is at Walkerville, Ont., manufacture what is known as Blackleg Vaccine, in single and double form, and with the vaccine furnish a complete vaccinating outfit, which is convenient, compact, and reasonable in price. The Parke, Davis Co. have recently issued a seven-page leaflet, containing an up-to-date treatise on this disease and on blackleg vaccine.

Manitoba Dairy School

THE SIXTH SESSION
 WILL OPEN ON
JANUARY 7th, 1901.

A FULL COURSE OF INSTRUCTION IN

**Home Dairying,
 Butter and
 Cheese Making,
 and all work pertaining to the
 Dairy Industry.**

For information and application blanks, address

C. A. MURRAY,

Dairy Superintendent,
WINNIPEG, - MANITOBA.

IT'S A WINNER.

So is our

Ideal Flax note-paper and envelopes

120 sheets of paper with 100 envelopes, mailed for 60 cts.

This is only one of the many snaps we offer. We carry a full stock of office, school, municipal supplies. Write us for catalogue. Our store is "value."



The FORD STATIONERY CO.,

One door north of P. O.



The Good Enough Sulky Plow

CAN NOT BE BEAT.

The Price will please you and its work will surprise you!

Write for illustrated circular. It will pay you.

CANADIAN MOLINE PLOW CO.

Winnipeg, Man.

METAL EAR LABELS

Used by all Live Stock Record Associations.

Sheep size, per 100..... \$1.50
 Hog size, per 100..... 1.50
 Cattle size, per 100..... 2.00

Punch and Pliers for attaching labels to ear, each \$1.00. Name on one side and any numbers wanted on reverse side.

F. S. BURCH & CO.

178 Michigan St., CHICAGO, ILL.

"DOMINION" PIANOS & ORGANS



HAVE been before the public for thirty years, and are in use today in 60,000 Canadian homes. If you want a piano or organ that is above criticism, get a "DOMINION". For catalogue address

THE
"Dominion" Organ and Piano Co., Limited, Bowmanville, Ont.

It's a Good One.



Each of the political parties are actively engaged rushing forward their candidates, and each expects to win, but we are just going on with our knitting, and have succeeded in making the

'LITTLE OX'

Furnace the greatest winner of public favor in the market.

Ask about the 'LITTLE OX' Furnace. You don't get one every day; get the best. The 'LITTLE OX' is a good one.

Manufactured by

The Gurney Foundry Co., Ltd., 153-155 LOMBARD ST. Winnipeg.

Winnipeg Industrial, 1900. 14 FIRST PRIZES. 5 SECOND PRIZES.	Fort Rouge Poultry Yards	Western Fair, Brandon, 1900. 12 FIRST PRIZES. 5 SECOND PRIZES.
---	---------------------------------	---

Still lead them all in

Golden Wyandottes, Indian Games, Black Langshans, Pekin ducks, Belgian hares and Fancy pigeons. A few choice birds for sale at reasonable prices. Have also for sale very cheap to make room for winter: Light Brahmas, Plymouth Rocks, and White Wyandottes

For prices and particulars, write **S. LING & CO., Winnipeg, Canada.**

Maw's Poultry Farm, Winnipeg.

BREEDS BEST STRAINS OF UTILITY BREEDS.

Thoroughly acclimatized and best adapted to our climate. Have for sale stock and eggs of Mammoth Bronze Turkeys, Toulouse Geese, Imperial Deep-keeled Pekin Ducks, English Rouen Ducks, White Wyandottes, White Leghorns, Silver-Laced Wyandottes, Light Brahmas, Hero Strain Plymouth Rocks, Homing Pigeons from best imported Belgian stock, same as used by the army for carrying messages from beleaguered cities. Large illustrated catalogue, giving list of prizes and medals won at all leading exhibitions, with prices, description and pedigree of stock mailed free on receipt of address. I am North-west agent for the celebrated **CYPHERS INCUBATOR AND BROODER**. Mr. Cyphers is the discoverer and patentee of the diffusive principle in artificial incubation, thus saving the lives of thousands of chicks that die in the shell in ordinary incubators. It is asbestos-coated and perfectly fireproof. Supplies and regulates its own moisture, and so simple a child can operate it with success. Write for particulars.

STAY AT

HOTEL LELAND

The Leading Hotel of the West.

ALL MODERN CONVENIENCES. RATES, \$2 to \$4 PER DAY, ON. BREAKFAST MEETS ALL TRAINS.

W. D. DOUGLAS, Prop., Winnipeg, Man.

THE
Very Best

PLACE FOR THE FARMER'S SON TO SPEND THE WINTER MONTHS IS AT THE

Winnipeg Business College.

WRITE FOR HANDSOME CATALOGUE (FREE).

G. W. DONALD, SECRETARY.

WILD AND IMPROVED LANDS FOR SALE.

Several good farms at present for sale or rent in the celebrated Edmonston district. All improved. Terms reasonable. Apply for information to **O. C. PEDERSON, Box 187, Strathcona, Alta.**

DR. BARNARDO'S HOME.

The managers of these institutions invite applications from farmers and others for boys and youths, who are being sent out periodically, after careful training in English homes. The older boys remain for a period of one year at the Farm Home at Russell, during which time they receive practical instruction in general farm work before being placed in situations. Boys from eleven to thirteen are placed from the distributing home in Winnipeg. Applications for younger boys should be addressed to the Resident Superintendent, 115 Pacific Avenue, Winnipeg, or P. O. Box 970; and for older boys, possessing experience in farm work, to Manager, Dr. Barnardo's Farm Home, Barnardo, Man.

OUR PHOTOS

Are made to please you and your friends. A photo is of no use unless it does. When in Winnipeg, call at our studio, and let us prove to you that we make the best photos.

PARKIN'S STUDIO,
 490 MAIN ST.,
WINNIPEG, MANITOBA.

GOSSIP.

The portrait of the Clydesdale stallion, Premier Prince, which appears on another page in this issue, represents a high-class horse of the breed, bred by W. & G. Cairns, near Edinburgh, Scotland, and imported in 1889 by his present owner, Mr. Alex. Galbraith, Janesville, Wisconsin.

PURE-BRED STOCK FOR BRITISH COLUMBIA.

The Weekly Columbian of New Westminster gives a detailed report of the auction sale, at the close of the Provincial Exhibition there, of a carload of pedigreed stock imported from Ontario by the Dairyman's Association, which had secured from the Provincial Government a vote of \$300, to be used in case of any loss in the venture.

MR. S. DYMENT'S BERKSHIRES.

There appears to be a general awakening among breeders of pigs in favor of the Berkshires. A few breeders, with every confidence in the popularity and general usefulness of the breed, have labored with the end in view of being on the ground floor with a goodly supply of the most popular tribes obtainable.

THE KANSAS CITY SHORTHORN SHOW AND SALE.

At the Kansas City Shorthorn sale, Oct. 18th to 20th, forty-seven bulls sold for an average of \$310, and ninety-eight females for an average of \$317. The best price for a bull was \$1,000, for the roan yearling, Knight's Valentine 157,068, bred and owned by G. E. Ward, Hawarden, Iowa, and the highest-priced female was the red 7-year-old Missie of Browndale, bred by H. F. Brown, Minneapolis, owned by J. W. Smith & Sons, Alton, Iowa, sired by Goldstick, and sold for \$800.

Farmers' Boys and Girls enabled to support themselves while learning professions.

Young men or women obliged to earn their own living are not deterred from a successful career because they have not the time or means to attend college.

Through This Plan Have Become Have Become

Write, stating subject in which interested. The International Correspondence Schools, Box 1517, Scranton, Pa.



"Look at This."

I have received instructions from Geo. Claxton to sell the following farms: One section, all fenced, as follows: W. 1/4, 30, 15, 12; frame buildings and painted; stable, 40x80; stable, 16x30; granary, 20x32; machine shed, 16x30; hog house, 16x60; shed frame to hold 100 head cattle.

High-class Shorthorns and Yorkshire Pigs. One very superior bull, about 17 months old; three bulls about 5 months old, from imp. stock; cows and heifers due to calve this fall.

Mr. James McArthur, Goble's, Ont., places a new advertisement in this issue, of Shorthorn cattle and Yorkshire pigs, which he is offering for sale, including young bulls and pigs of various ages.

The pair of strong and handsome Shropshire ewe lambs illustrated on another page of this issue are typical of a choice bunch shown by the Messrs. Hammer at the Toronto Industrial Exhibition, where they won first and second awards in strong competition.

The Aberdeen-Angus bull, Kyma's Heir, owned by Mr. James Bowman, Guelph, and illustrated in this issue, was the winner of the championship as best bull any age in his class at the three leading shows in Ontario this year, and is a first-class representative of this excellent breed of beef cattle.

The U.S. Department of Agriculture has decided to station in Britain one of the veterinarians of the Bureau of Animal Industry, with full authority to apply the tuberculin test to all cattle purchased in that country for importation to the United States.



Owned by H.A. Chadwick, St. James, Man.

As I have decided to go into the breeding of Plymouth Rocks exclusively, I will sell at reasonable prices my entire stock of prize-winning Brahmas, Langshans, Partridge Cochins and Bantams.

GOSSIP.

At the sale of Shorthorns, on Oct. 14th, from the herd of Martin Flynn, at Des Moines, Iowa, a noticeable feature was that the Bates-bred cattle sold equally as well as those that were Scotch-bred, and good animals of old-fashioned families about as well as the most fashionable bred.

At a sale of Shorthorns from the herd of E. S. Donahy, Newton, Iowa, Oct. 5th, 39 head sold for an average of \$230.67. The highest price made was \$1,000, for imp. Roan Bess, bought at Mr. Platt's sale, at Chicago, in Aug., for \$1,050.

That dehorning pedigreed Shorthorn cattle does not pay when it comes to selling them at auction was pretty clearly demonstrated at Newton, Iowa, Oct. 6th, where 51 head sold for an average of \$131, the top price for cows being \$260, and for bulls, \$300.

At the joint sale of Shorthorns from the three well-known Aberdeen-Angus herds of Messrs. A. M. Gordon, Newton; John Wilson, Pierriessmill, and Captain Graham Stirling, of Strowan, on Oct. 10th, the averages made were as follows: Newton, 21 head, \$418.; Pierriessmill, 21 head, \$32 1/2.; Strowan, 11 head, \$32 6/8.

NOTICES.

Winter Dairy School.—The dairy branch of the Department of Agriculture of the Province of Manitoba has issued a circular containing information regarding the winter dairy school for the course which will open on the 7th of January, 1901.

A Thorough Course of Study at Home.—The International Correspondence Schools at Scranton, Pa., have solved the problem of cheap, practical education in a remarkable degree.

Of Value to Horsemen.—Do you turn your horses out for the winter? If so, we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused.

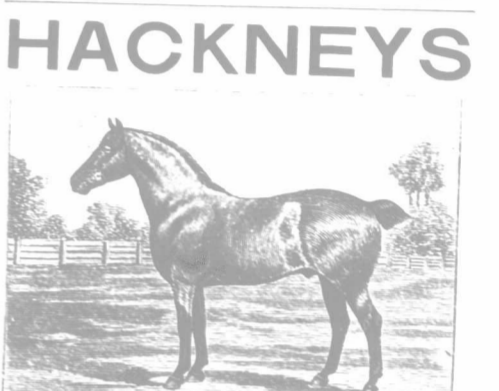
Mr. Lanelet Tasker, Harlock, Ont., puts a new advertisement in this issue, of his Oxford Down rams and ram lambs. On November 28th an important auction sale of pure-bred Shorthorn cattle and Oxford Down sheep will be held near Hespeler, Ont.

HORSEMEN! THE ONLY GENUINE IS GOMBAULT'S CAUSTIC BALSAM.

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.



ANY WOOD IN ANY POSITION. 1 MAN with a FOLDING BEATS 2 MEN with a Cross-cut Saw. 5 to 9 cents daily is the usual average for one man.



HAVE on hand, and FOR SALE, two 3-year-old Hackney fillies (prizewinners), broken to harness and stabled to Rosseau Performer 5 1/2 E.H.S.B.;

HORACE N. CROSSLEY, "SANDY BAY FARM," DIST. OF PARRY SOUND, ROSSEAU.

IMPORTANT AUCTION SALE OF Shorthorn Cattle and Oxford Down Sheep, the property of Wm. R. Elliott, 11 miles north of Hespeler and 6 1/2 miles south of Guelph, on Wednesday, November 28th, 1900.

THOS. INGRAM, WM. R. ELLIOTT, Hespeler, Auctioneer, Guelph.

FOR SALE. CLYDESDALE stallions, mares and fillies, representing the best blood in Scotland.

THOS. GOOD, Richmond P. O., Ont.

FOR SALE or TO LET, a well-equipped henry, with 10 acres of land, dwelling house and barn.

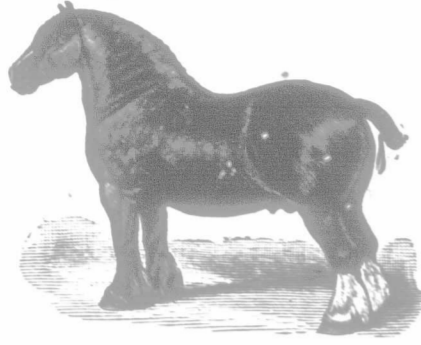
ROBT. NESS & SONS, HOWICK, QUEBEC, BREEDERS AND IMPORTERS OF Clydesdale Horses & Ayrshire Cattle.

14th Importation.

MR. F. S. PEER, of Mt. Morris, N. Y., will sail for England, Scotland, and the Channel Islands, November 10th, and will be pleased to have further commissions from Canadian breeders. Stock selected by Mr. Peer won the highest honors this year at Toronto, Ottawa, and Halifax Exhibitions.

Shipment of Clydesdale Stallions

THREE YEARS OLD AND UPWARDS.



just arrived in good condition from Scotland by Steamer Tritonia.

Among them are the largest Clydesdales ever imported.

We are the largest importers in Canada.

Correspondence solicited.

Dalgety Bros., 463 King St., LONDON, ONT.

"Post" Fountain Pen.

SOMETHING THAT EVERY MAN, WOMAN, BOY AND GIRL NEEDS.

It is a wonderful tribute

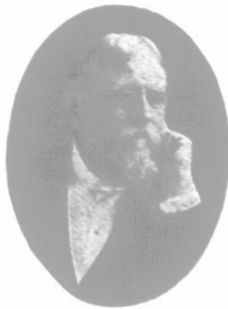
to the greatest invention in fountain-pen construction of the age.

THE PRICE OF THIS POST IS \$3.00. IT CANNOT BE PURCHASED UNDER THIS PRICE ANYWHERE.

The patentee has a hard-and-fast agreement with the trade and agents that \$3 shall be the lowest retail price. By a special agreement we are in a position to make

A Great Offer:

We will send one of these pens to anyone who sends us three new subscribers, accompanied by \$3.00 in cash.



General Lew Wallace, the author of the greatest book of the age, "Ben Hur," also "Prince of India," "Commodus," etc., says in a letter in his own handwriting: "The fountain pen, Post, was received, and I have taken the liberty of trying it thoroughly. Please accept the excuse for failure to acknowledge sooner."

"I have tried every pen of the kind on the market, and now unhesitatingly give the preference to the Post. It not only feeds itself with less care, but has the immeasurable advantage of re-supply without inking the fingers. I do all my work with it."

Lew Wallace.

To show our confidence in this pen, we will send you one on trial for a week upon receipt of \$1.00, which, if not entirely satisfactory, you can return to us and we will refund you the \$1.00 paid us. If satisfactory, you must send us the names and addresses of the three new subscribers and \$2.00 additional cash.



This only self-filling and self-cleaning pen, manufactured in the world. To fill the pen, put the nib in ink and draw the piston rod up. To clean, put the nib in water and draw the piston rod backwards and forwards a few times.



A, Barrel; B, Nozzle; C, Pen; D, Feed; E, Plunger; F, Rod.



The world's greatest singing evangelist, who has thrilled thousands and tens of thousands, now raises his voice in praise of the Post Fountain Pen.

Mr. Sankey sends the following characteristic letter: "I have used the Post pen for some time, and have had great satisfaction with its use. It never fails or gets cranky. One can at least have clean hands by using the Post, whatever the heart may be."

Frank Sankey.

ADDRESS—

THE Wm. Weld Co., LTD.,

WINNIPEG, MAN.

THE BIG FOUR.

Great Premium Picture Offer

For obtaining new subscribers to the FARMER'S ADVOCATE at \$1.00 per year.

"Canada's Ideal"—Admitted by judges, breeders and artists to be the most magnificent engraving of high-class modern Shorthorns ever issued in any country. 24 x 36 inches. Twelve animals.

"Canada's Pride"—Nine celebrated draft horses.

"Canada's Glory"—Eleven celebrated light horses.

"Canada's Columbian Victors"—13 celebrated Ayrshire cattle.

Your choice of any one of the above for ONE new subscriber, or all four beautiful pictures for only three new subscribers.

Our Self-Binder, HANDY, DURABLE and ATTRACTIVE.

Made to contain the 24 issues of the year. We will forward this Binder, postpaid, to anyone sending us the names of two new subscribers and \$2.00.

Bagster's NEW Comprehensive Teacher's Bible,

Containing the Old and New Testaments, according to the authorized version, together with new and revised helps to Bible study—a new Concordance and an indexed Bible Atlas, with SIXTEEN FULL-PAGE ILLUSTRATIONS, PRINTED IN GOLD AND COLOR.

HOW TO OBTAIN IT—

Would retail at from \$3 to \$4. We will send (carefully packed, post prepaid) this Bible to anyone sending us the names of TWO NEW SUBSCRIBERS to the FARMER'S ADVOCATE at \$1.00 each.

The BALANCE of this year's issues given FREE to all NEW SUBSCRIBERS for 1901.

Write for a sample copy of the Farmer's Advocate, and begin to work for these premiums right away. In every case cash must accompany the new names.

ADDRESS

The Wm. Weld Co., Ltd., Winnipeg.

GOSSIP.

THE DUTHIE AND MARR BULL SALE.

The autumn series of annual sales of Short-horns in the north of Scotland was opened at Tillycarn, October 9th, by the offering of 32 bull calves from the famous herds of Mr. Wm. Duthie, Collynie, Tarves, and Mr. W. S. Marr, Uppermill, Tarves. Of these, 19 were from Collynie and 13 from Uppermill. The average for the latter was £125 11s. 4d.; for the former, £140 8s. 6d.; and for the entire 32 head of bull calves, £140 11s. 6d. The average of the Collynie calves at the 1899 sale was £123 18s., and of the Uppermill offering, £116 8s. 6d. The highest price paid at last year's sale was 305 guineas for one of Mr. Duthie's, and the highest this year, 355 guineas (\$1,860), for Violet Victor, from the same herd, of the Siltlyton Violet tribe, by Silver Plate; Mr. P. L. Mills, Riddington, being the purchaser. Primrose-Pride, another of Mr. Duthie's calves (by Pride of Morning), sold for 350 guineas to Mr. Jolliffe. The third highest priced bull, Silver Mist, also of the Collynie contingent, a roan son of Silver Plate, out of a Missie dam, by Scottish Archer, and his granddam by William of Orange, fell to the bid of Mr. W. D. Platt, Hamilton, Ont., at 290 guineas. Of this calf the *Scottish Farmer* says: "This is an exceedingly wealthy roan, calved on the 2nd of January. He was started by Mr. Peterkin at 100 guineas, and rose very rapidly to 200 guineas, when keen bidding ensued between Mr. Beck, agent for the Prince of Wales, and Mr. George Campbell, acting for Mr. Platt, who was also present, and in the end the Canadian scored against His Royal Highness, and the calf goes to Canada at 290 guineas. Mr. Platt also secured Mr. Duthie's Heir of Fame,

a red calf, dropped in February, and sired by Pride of Fame; and Mr. Marr's Wanderer's Last, a dark roan, calved in May, a son of Wanderer and Missie 14th, by Roan Robin." Manager Barnett, acting for W. C. Edwards & Co., Rockland, Ont., secured from Mr. Duthie's offering the roan Siltlyton Champion, by Scottish Champion, dam a Cruickshank Chipper by Scottish Archer, grandam by William of Orange, and great grandam by Champion of England. He is a roan, calved January 29th. For the Rockland herd was also secured Lord of the Manor, from the Collynie quota, a roan calf, dropped in April, and sired by Lovat Champion, his dam being Mademoiselle 8th, of the Missie tribe, by Master of the Ceremonies, bred at Siltlyton. This is described as a big quartered, stylish calf, of the choicest quality and breeding. The highest price paid for one of Mr. Marr's calves was 230 guineas, for Spicy Marquis, by Spicy Robin, a roan January calf, bought by Mr. Ward, of Ohio. Mr. Gerlaugh, of the same State, secured two of the Uppermill calves at 100 guineas each. They were the dark roan Dauntless Victor, a February calf, by Prince's Victor, dam Missie 14th, and the red Golden Emperor, a May calf, by Bampton Emperor, dam Missie 16th. The sale may well be called a success, considering that the South American demand was cut off by the regulations prohibiting importation to those colonies, from which in former years some of the best buyers came, the average this year for Mr. Duthie's calves being \$125 higher than last year, and for Mr. Marr's, an advance of \$145 each.

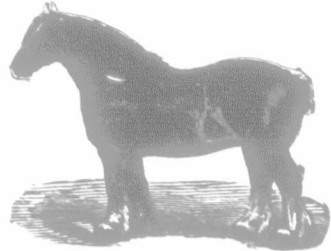
IN WRITING

PLEASE MENTION FARMER'S ADVOCATE.

THORNCLIFFE Stock Farm

The largest stud of Clydesdales in Canada, headed by the Champion Stallion of all ages,

"LYON MACGREGOR."



Stallions and Colts

From the best blood in Scotland and Canada. Ayrshire bulls and heifers from imported stock Jersey heifers and bull calves, sired by the prize-winning bull, Distinction's Golden. Best milking strains, with good teats.

Terms reasonable. A visit to Thorncliffe will well repay you.

ROBT. DAVIES,

Thorncliffe Stock Farm, TORONTO.

NEW IMPORTATION

Just arrived. Personally selected from the best studs in England and Scotland.

CLYDESDALES

By the champion winners, Baron's Pride, McGregor, Flashwood, Prince Alexander, Prince of Carruchan, etc.

Shires, Suffolks, Percherons and Hackneys

By the leading sires of the day, all combining size, color, quality and action.

Fourteen first prizes and six second prizes won at the recent State Fairs of Illinois, Iowa, and Wisconsin, in the very hottest competition. Inspection cordially invited.

ALEX. GALBRAITH, Janesville, WIS.

BARRED PLYMOUTH ROCKS and GOLDEN WYANDOTTES.

For sale: Fine young birds of above varieties—cockerels and pullets. Being short of room, will sell very reasonably to quick buyers. Satisfaction guaranteed. Write **JAMES ROW,** Avon, Ont.

SPRING GROVE STOCK FARM

Shorthorn Cattle and Lincoln Sheep. Herd prize and sweepstake at Toronto Industrial Exhibition, 1897 and 1898. Herd headed by Topsman =17847=, champion at Winnipeg, Toronto, London and Ottawa, 1899. High-class Shorthorns of all ages for sale. Also prizewinning Lincolns. Apply on

T. E. ROBSON, Ilderton, Ont.

SCOTCH SHORTHORNS.

100 head to select from. Imp. Diamond Jubilee =28841= at the head of the herd. 25 grand young bulls, and cows and heifers of all ages, of the most approved breeding.

T. DOUGLAS & SONS, Strathroy Station and P. O. Farm 1 mile north of the town.

Shorthorns and Leicesters.

Herd Established 1855.

A number of young bulls, cows and heifers for sale. Herd headed by imported Christopher 28839, and Duncan Stanley =16394=. Grand milking cows in herd. Also a number of Leicesters of both sexes, from imported foundation.

JAMES DOUGLAS, CALEDONIA, ONT.

Maple Lodge Stock Farm

ESTABLISHED 1854.

SHORTHORNS—An excellent lot of young bulls, and a special value in young cows and heifers in call to our imported Knuckle Duster.

LEICESTERS Imported and home bred—the best.

ALEX. W. SMITH, MAPLE LODGE P. O., ONT.

Bonnie Burn Stock Farm

Forty rods north of Stouffville station, Ont., offers for sale Shorthorn bull calves and yearling heifers, Shropshire lambs and shearlings (both sexes). om **D. H. RUSSELL,** Stouffville, Ont.

Pure Scotch Shorthorns for Sale. Two bulls and fifteen months old, and three two-year-old and two one-year-old heifers. All right. Good ones. Meadowvale station, C. P. R. **S. J. PEARSON & SON,** Meadowvale.

HAWTHORN HERD OF DEEP-MILKING SHORTHORNS.

We are offering 5 young bulls for sale, of first-class quality, and AI breeding. om **Wm. Grainger & Son,** - Londonboro, Ont.

SPRINGHURST SHORTHORNS.

The herd is largely of Cruickshank and other Scotch sorts, and is headed by the Inverjuthoney-bred bull, Knuckle Duster (imported) (72739). Herd has furnished the Fat Stock Show champion three times in the last five years.

Choice young stock (both sexes) FOR SALE.

H. SMITH, - HAY, ONT. Exeter Station on G. T. R., half a mile from farm. om

JAS. DORRANCE, SEAFORTH, ONTARIO.

BREEDER OF Shorthorn Cattle and Berkshire Pigs Young stock always for sale. om

R. MITCHELL & SON, Burlington Jet. Station, Nelson, Ontario.

Breeders and importers of **SCOTCH SHORTHORNS.** Offer for sale: 12 Canadian-bred females. 11 Imported females. 4 Imported bulls. 7 Canadian-bred bulls.

R. & S. NICHOLSON SYLVAN P. O., PARKHILL STATION.

Scotch Shorthorns, imp. and home-bred. The Imp. Clipper bull, Chief of Stars, heads the herd. Nine bull calves for sale, 8 to 10 mos. old (extra good ones), sired by Royal Standard. Inspection invited.

SHORTHORNS FOR SALE

Cows and heifers, also a few young bulls. I have employed sons of Lord Lovel, Royal Member, Perfection, Indian Chief, and Clan Campbell, on Lord Lovel and Aldotsburn females. om **WM. HAY, TARA, ONT.**

SHORTHORNS

Cows, heifers and bulls ready for service, by Scottish Chief =27241=, by Scottish Pride (imp.). Dam Fane's Gem, by Guardsman (imp.).

BERKSHIRES.

Modern type, well-bred boars and sows, all ages. om **ALEXANDER LOVE,** EAGLE, ELGIN CO., ONT.

Shorthorns, Cotswolds, & Berkshires

Our Shorthorn herd was founded on Bates and Cruickshank blood, upon which we have employed only Scotch-bred bulls. 60 to select from. We are now offering an extra choice lot of young bulls and heifers from Duchess of Gloster and Miss Ramsden sires, on Cecelia and Anchoy dams. Also Cotswolds, shearlings and lambs, and Berkshire pigs. om **F. BONNYCASTLE & SON,** Campbellford, Ont.

W. D. FLATT

Hamilton, Ont., Can.,

IMPORTER AND BREEDER OF

Shorthorn Cattle.

My herd is one of the largest in America, both imported and Canadian bred. A very choice importation of 27 head now in quarantine and due out Oct. 11. New catalogue of the herd ready for distribution Oct. 1. Address all communications to

James Smith, Mgr.,

MILLGROVE, ONT.

R. R. Station and Telegraph, Hamilton, on main line Grand Trunk R. R.

PLEASE MENTION FARMER'S ADVOCATE.

DISPERSION BY AUCTION

OF A HIGH-CLASS HERD OF

SCOTCH SHORTHORNS

AT MARKHAM, ONTARIO,

TUESDAY, DEC. 18TH,

Being the entire herd of **MR. JOHN ISAAC,** who is retiring from farming, and will sell without reserve.

This offering of 51 head includes:

- | | |
|-----------------------|------------------|
| 16 Cows | 6 Imported bulls |
| 15 2-year-old heifers | 1 Home-bred bull |
| 11 Yearling heifers | 2 Heifer calves. |

FORTY-FOUR are imported animals, selected from first-class Scotch herds, and strong in breeding and individual merit, and are representatives of the Ury, Claret, Golden Drop, Lavender, Broadhooks, Rosemary, Mina, Jilt, and Lady Dorothy tribes.

Catalogues will be mailed on application to—

JOHN ISAAC,

MARKHAM, ONT.

H. CARGILL & SON,

CARGILL, ONTARIO, CANADA.

WE have the largest herd of Cruickshank and Scotch-bred imported cattle in Canada. Herd headed by the Duthie-bred Golden Drop bull, imp. "Golden Drop Victor," assisted by the Marr-bred Princess Royal bull, imp. "Prince Bosquet." The herd was augmented in August last by a fresh importation of fifty-two head, personally selected by Sylvester Campbell, of Kinellar, an expert judge both as to individuality and pedigree. The cattle in this lot will compare very favorably with any lot yet imported. All females of suitable age are bred to the very best bulls obtainable. Correspondence or personal inspection invited. Catalogue and service list upon application.

Cargill Station is on the Farm, Half a Mile from Barns, and 70 Miles North-west of Guelph. See Catalogue for Map.

The Breed THAT FIRST MADE Hillhurst Famous SHORTHORN FEMALES

Ever sold in Great Britain and the sire and dam of the 4,500-guinea Duke of Connaught were bred at Hillhurst. To-day "Joy of Morning," the highest-priced Scotch-bred bull ever imported to Canada, and "Scottish Hero," brother in blood to the Royal champion "Marengo," are in service in a herd of 65 Scotch and Scotch-topped Shorthorns in a hilly limestone district, where cool summers, green pastures and winter food more closely approach Aberdeenshire conditions than any other part of the continent. **HAMPSHIRE DOWN and SHROPSHIRE SHEEP.**

M. H. COCHRANE,

HILLHURST STATION. COMPTON CO., P. Q.

W. G. Pettit & Son, FREEMAN, ONT.

IMPORTERS AND BREEDERS OF

Scotch Shorthorns and Shropshire Sheep

OFFER FOR SALE:

- 20 Imp. bulls.
- 40 Imp. cows and heifers.
- 6 Home-bred bulls.
- 30 Home-bred cows and heifers.
- 7 Shearling rams.
- 20 Ram lambs.
- 25 Ewe lambs.

Burlington Junction Station, Telegraph and Telephone Offices, within half a mile of farm. om

SHORTHORN CATTLE AND LINCOLN SHEEP.

Imp. Prime Minister at head of herd. Seven young bulls for sale—good ones. Also a few females. Stud rams all imported from H. Dudding, Esq.; the same blood as the 1000-guinea ram.

J. T. GIBSON,

DENFIELD, ONT.

JOHN DRYDEN,

BROOKLIN, ONTARIO,

OFFERS SIX YOUNG SHORTHORN BULLS, ready for service, at reasonable prices. Strong, active, masculine. om

GOOD QUALITY AND CHOICE BREEDING.

A QUICK, SHARP CUT
 Done with the **KEYSTONE KNIFE**
 On the safest, quick, sharp cut. Cuts from four sides at once. Cannot crush bruise or tear. Most humane method of dehorning known. Took highest award World's Fair. Write for free circulars before buying.

Owned and Manufactured by **R. H. McKENNA, V.S., Picton, Ont.**
 THE LATE A. C. BROS US. PATENT.

SCOTCH SHORTHORN BULLS AND HEIFERS
 HERD ESTABLISHED IN 1872.
 Such sires as imported Royal George and imported Warfare have put us where we are. Imported Blue Ribbon now heads herd.

A. & D. BROWN,
 ELGIN COUNTY. -om IONA, ONTARIO.

SPRINGBANK FARM.
 Shorthorn Cattle, Oxford Sheep, and Bronze Turkeys. Young bulls for sale.

om **JAS. TOLTON, WALKERTON, ONT.**

Water Basins
 Disease Proof !!!



WOODWARD WATERING BASIN
 ONTARIO WIND ENGINE & PUMP CO.

Point 5. Our basins guarantee against contagion by water in case of disease. No water can return from basin once it has entered. It insures each animal its own drink. A feature indispensable.

Point 6. (See next issue.)

Ontario Wind Engine & Pump Co.
 LIMITED.
 TORONTO.

90 HEAD
 High-quality, Early-maturing Herefords
 Prizewinners.
 Young bulls, cows, heifers.



The blood of "Corrector," "Eureka," "Ancient Briton," and "Rupert," on an "Anxiety" foundation. Send for illustrated catalogue.

H. D. SMITH, COMPTON, QUE.

HEREFORDS FOR SALE.
 THE HERD of upwards of 90 head of registered animals; contains the blood of the best English herds, with imported True Briton and Likely Lad at the head. Stock of both sexes and all ages for sale. Correspondence or a personal visit invited.

A. S. HUNTER,
 DURHAM, ONT.

Herefords for Sale.
 Three or four one-year-old bulls, cows and heifers.

The Plains Farm, Arkell; Moreton Lodge, next the O.A.C. College; containing 200 to 250 acres each.

The F. W. Stone Stock Co.,
 Guelph, Ont., Can.

Maple Glen Stock Farm.
 The home of officially tested, Advanced Registry, dairy test and showing-win HOLSTEINS. A grandson named herd of SYLVIA HOLSTEINS, of Carmen Sylva now for sale. Price is in keeping with breeding and performances.

C. J. GILROY & SON,
 Brockville, on C.P.R. or G.T.R. Glen Buell, Ont.

OWING TO DROUTH
 will sell five Holstein-Friesian heifers, two or three years old, for \$350. Fine animals, of rich breeding, and bred to the great butter-fattest bull, Johanna Rue 2nd's Paul De Kol (21724), at head of our herd. Also bull calves at reduced prices. Fine chance to start herd of pure-breds.

SOUTH SIDE FARM CO., ST. PAUL, MINN.

WE WANT TO SELL A FEW
Holstein Heifers, coming 2 years old
 or a few young Cows.
 THEY are of the richest and largest producing strains, fine individuals, and bred to as good bulls as there are living. We have a few bull calves and yearling bulls also for sale.

HENRY STEVENS & SONS,
 LACONA, OSWEGO CO., N. Y.

GOSSIP.
 Eighty-three head of Herefords, consigned by Lewis Bros., Geneseo, Ill., were sold at Dexter Park, Chicago, Oct. 11th and 12th, at an average of \$178.73. The highest price for a bull was \$100, and for a female, \$500.

Prof. Plumb, of the Indiana State Experiment Station, has purchased from Mr. Sanders Spencer, Holywell Manor, St. Ives, Eng., a young Shorthorn bull for service in the herd at the Station. He is a son of the Scotch-bred bull, Count Valiant, by Count Lavender, and his dam is a heavy-milking cow, descended from a herd which, in its time, was noted for the many Smithfield winners it produced. It is frequently the case that the cows that are the largest milkers, when not in milk are the fastest feeders, and they are a good sort, other things being satisfactory, from which to breed a stock bull.

NOTICES.
Stock Book Free.—The \$3,000 stock book referred to in the advertisement of the International Food Co., Minneapolis, Minn., U.S.A., is an interesting volume for its varied and helpful information as well as its hundreds of fine illustrations. Among the portraits produced are those of Rysdyke's Hamiltonian 10, his sire and grandsire; Imported Messenger; Robert J., 2.01; Directum E., 2.05; Star Pointer, 1.591; George Wilkes, 2.22, and others of similar importance. The volume has extensive departments for horses, cattle, hogs, sheep, poultry, and veterinary.

Steel Fences.—The American Steel & Wire Co., Chicago, advertise in this issue their Ellwood steel fences, which they manufacture in several varieties or styles, in heights from 18 to 58 inches, suiting all fencing purposes from the lawn to the stock fence. Their 26-in. fence is a special favorite for hogs. Their several other styles and heights are equally appropriate for the purposes intended. In selling this fence, the manufacturers guarantee every rod to be perfect. Among the claims for the fence made by the manufacturers are the following: Special selected steel stock of their own manufacture; special galvanizing, with zinc of their own production specially for this purpose; simplicity of construction, with ample provision for expansion and contraction; hinged joint at every intersection of the horizontal wires, with perpendicular stays, which prevents bending when subjected to strain; and all the above in combination, securing a fence at once cheap, durable, strong and efficient.

Sheep Husbandry.—A useful book, which covers in a comprehensive and at the same time detailed, helpful manner the subject of sheep-raising—particularly in Minnesota, but also applicable to the entire Northwest—has recently been produced from the pen of Prof. Thomas Shaw, of the University of Minnesota. The volume, which embraces some 216 pages, is published and distributed under the auspices of the Minnesota Live Stock Breeders' Association. It treats of every phase of sheep husbandry as adapted to the conditions of the farm, from the selection of breeding stock and the birth of the lamb until it reaches the block. Model sheep pens are illustrated and described, and full details are given for the fattening, shearing, dipping, etc., so that both the novice and the experienced shepherd can learn valuable lessons. The book was written by the author without compensation, and is dedicated to the farmers of Minnesota, who can receive copies at 3 cents each. Anyone outside of Minnesota can obtain a copy who forwards 25 cents to the Minnesota Live Stock Breeders' Association, whose Secretary is Prof. Thomas Shaw, St. Anthony Park, Minn.

Maple Hill Holstein-Friesians
 SPECIAL OFFERING.
 Bull calf 8 months old, sired by DeKol 2nd's Paul DeKol Duke. Bull calf one week old, sired by Daisy Teake's King. Also several fine females, all ages.

G. W. CLEMONS,
 HARRISBURG STS., -om ST. GEORGE P. O., ONT.

BROOKBANK
 Is headquarters for Holstein bulls. They are going fast; be quick if you want one. In writing, state age, etc., preferred.

GEO. RICE,
 Oxford Co. Currie's Crossing, Ont.

Maple City Jerseys.
 One Jersey bull two years old. Some very choice bull calves from 2 to 5 months old, and a few high-grade heifers and heifer calves. All of the choicest breeding. Write for prices.

Box 552. W. W. EVERITT, Chatham, Ont.

GLEN ROUGE JERSEYS.
WILLIAM ROLPH, Markham, Ont., offers twelve Jersey Bulls and Heifers (pure St. Lamberts), out of tested cows. Grand individuals. Prices right.

TO THOSE WANTING
A SURE PRIZEWINNING BULL
 to head their Jersey herd, I offer
Prince of Belvedere 11655
 3 years old, solid bronze fawn. Dam, 171 lbs. butter a week; sire's dam, 20 lbs. 6 ozs. a week. Also, Golden Fawn Cow, 5 years, superb udder, grand butter record.
 Also a Young Stock, both sexes and rare quality.

MRS. E. M. JONES,
 Box 324, -om BROCKVILLE, ONT.

Easy Harness
 All harness, old or new, is made pliable and easy—will look better and wear longer—by the use of
Eureka Harness Oil
 The finest preservative for leather ever discovered. Saves many times its cost by improved appearance and in the cost of repairs. Sold everywhere in cans—all sizes.
 Made by **IMPERIAL OIL CO.**



FOR SALE.
6 YEARLING JERSEY BULLS.
 sired by Brampton's Monarch (imp.), and from tested cows; also registered and high-grade springer.

B. H. BULL & SON, BRAMPTON, ONT.

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THE COUNTRY DEMANDS A CHANGE IN THE COLOR OF

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 THE NEW COLOR—



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 Covers well—Does not show the Dust—Durable and Permanent.

THE IDEAL PAINT FOR LASTING QUALITIES AND ECONOMY.

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Maple Cliff Dairy and Stock Farm.
FOR SALE:
 Ayrshires 6 yearling bulls, females any age.
 Tamworths 10 boars and sows of different ages.
 Berkshires 3 boars, a number of sows.

R. REID & CO., Hintonburg,
 Farm 1 mile from Ottawa. Electric cars to farm. -om

For Sale:
 Six Ayrshire bulls, ranging from 5 months to 1 year past. Also a few cows and heifers, thoroughbred hogs, and Scotch collie dogs.


WM. STEWART & SON, MENIE, ONT.

As we are not going to show any cattle at the fairs this year, we will sell the imported prizewinning bull, Napoleon of Auchenbrae, champion and head of first prize herd at Toronto, 1898. Also first class 2-year-old bull and three choice bull calves of last fall. These are all fit for the showing, as we kept them for that purpose. For prices and particulars come and see, or write. **James Boden, Mgr., St. Anne de Bellevue, Quebec.**
 Farm close to St. Anne Station, G.T.R. & C.P.R., 20 miles west of Montreal. -om

PLEASE MENTION FARMER'S ADVOCATE.

Choice Ayrshires, and Barred Rocks.
 A number of cows and heifers in calf to Glenore Sultan. Several choice young bulls.
 Plymouth Rocks of both sexes from prizewinning birds.

JAS. McCORMACK & SONS,
 -om ROCKTON, ONTARIO.



Ayrshire Bulls: Write to **J. YULL & SONS, Carleton Place,** for special prices on Ayrshire bulls from 14 years to 6 months. Four over 15 months, fit for service, from special milking stock. Sired by prize bull, Jock of Burnside—1884—, also females of all ages. Shropshire sheep of all ages; a number of fine ram lambs, Berkshire pigs of either sex, of the best bacon type. **B. P. Rocks.** -om

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FAMOUS ALL OVER THE WORLD.
ALFRED MANSELL & CO.,
 LIVE STOCK AGENTS AND EXPORTERS, SHREWSBURY.
 BRITISH STOCK selected and shipped to all parts of the world. Write for prices to **ALFRED MANSELL & CO.,** Shrewsbury, England, or to our American representative, **Robert Miller, Stouffville, Ont., Canada.**

W. W. Chapman,
 Secretary of the National Sheep Breeders' Association,
 Secretary of the Kent or Romney Marsh Sheep Breeders' Association,
 and late Secretary of the Southdown Sheep Society.
 Pedigree Live Stock Agent, Exporter and Shipper. All kinds of registered stock personally selected and exported on commission; quotations given, and all enquiries answered.
 Address: **FITZALAN HOUSE, ARUNDEL ST., STRAND, LONDON W. W.**
 Cables—Sheepcote, London. -om

Present Offering:
 Dorset lambs (either sex).
 Shropshire lambs (either sex).
 Chester White pigs (June and Sept. litters) of the bacon type.

For particulars, write to
R. H. HARDING, THORNDALE, ONT.

SHEEP BREEDERS' ASSOCIATIONS
 American Shropshire Registry Association, the largest live stock organization in the world. Hon. John Dryden, President, Toronto, Canada. Address correspondence to **MORTIMER LEVERING, Secretary, Lafayette, Indiana.** -om

Shropshires FOR Sale
 Rams and ewes of good breeding, fine lusty fellows. Prices reasonable.

ABRAM RUDELL, HESPELER, ONT.

Shropshire Rams and Ewes
 Newly imported from the greatest English breeders. Home bred rams and ewes of best quality. Scotch Shorthorns and Clydesdale horses for sale at moderate prices, and in large numbers, by

ROBERT MILLER, STOUFFVILLE, ONT.

SHROPSHIRE SHEEP AND CHESTER WHITE SWINE.
WM. E. WRIGHT, GLANWORTH, ONT.

Fairview Shropshires.
 A few good rams still on hand. A splendid lot of ewes (imported and home-bred), bred to my best stock rams, are now offered at good values. They are the producers of winners.

JOHN CAMPBELL, Woodville, Ont., Can.

TAPE BROS., importers and breeders of Ridgetown, Duroc- Jersey Swine, Ridgetown, Ont. ADDRESS: **TAPE BROS., Ridgetown, Ont.**

PLEASE MENTION FARMER'S ADVOCATE.

ARCHIE CROZIER,

BREEDER OF SHORTHORN CATTLE, YORKSHIRE AND BERKSHIRE PIGS, AND LEICESTER SHEEP, WARMLY ENDORSES

Thorold Cement.



Barn of Archie Crozier, Beachburg, Ont. Size of wall, 45x120 ft. Wall, cistern and floor built with THOROLD CEMENT. The holes showing along the top of the wall are for ventilation.

Read what Archie Crozier says about THOROLD CEMENT:
BEACHBURG, ONT., AUG. 14, 1900.

ESTATE OF JOHN BATTLE, Cement Manufacturers, Thorold, Ont.:

GENTLEMEN,—It is with pleasure that I testify to the good qualities of your Thorold Cement for building purposes. I have just completed a Basement Wall, Cistern and Floor throughout the entire building. Size of wall is 45 x 120 feet, 8 ft. above floor, and a 2-ft. footing. 12-in. wall above footing. I also put in door-sills and window-sills of cement. I used 280 bbls. of cement in the whole job. I consider it a cheaper and a better job than either brick or stone, and, furthermore, I have saved by building with cement 2,500 cubic feet of space over and above what I would have had if built with stone. Therefore I give credit to the Cement for \$160 on space. The work was under the direction of your man, Mr. Geo. W. Read, who understands his work well. I do highly recommend your Thorold Cement to any person intending to build any kind of building, for sturdiness, durability, and extra space.

I mail you a photo of our basement wall, and am sure you will be pleased with its appearance, for every person that sees it, either from Western Canada or any other place, say they never saw its equal for appearance, or from an architectural point of view.

ARCHIE CROZIER,
Breeder of Shorthorn Cattle, Yorkshire and Berkshire Pigs, and Leicester Sheep.
Correspondence solicited.

Estate of JOHN BATTLE, Thorold, Ont.



THE NATIONAL FARM Cream Separator

Manufactured by the Raymond Mfg. Co. of Guelph, Limited, manufacturers of the celebrated Raymond Sewing Machines.

THE National is an up-to-date machine, leading all others in separating cream by centrifugal force. It is the farmers' choice, because it runs easy, skims fast and clean, and makes a perfect cream, containing any per cent. of butter-fat desired. It is also easier to clean than any other. The National is built of the very best material suitable for the construction of a high-speed machine, and with proper care should last a lifetime. The bearings are interchangeable and easily adjusted. Every machine is guaranteed to do good work, and a trial of the "National" is solicited before purchasing any other. The already large sale of the "National," and the growing demand for it, shows how much the Canadian farmers appreciate a Canadian-made machine that does its work so easily and well, and at the same time returns such a large profit on the small investment. Ask for the "National"; try it and buy it.

THE CREAMERY SUPPLY CO., GUELPH, ONT.,
General agents for Ontario.

MESSRS. CAMPBELL & GLENN,
381 TALBOT ST., LONDON, ONT.,

Agents for the Counties of Middlesex and West.

"NATIONAL" NO. 1 HAND POWER.
Capacity 350 to 500 lbs. per hour.

The Raymond Mfg. Co'y of Guelph, Ltd.
GUELPH, ONT.

Rapids Farm Ayrshires.

REINFORCED BY A RECENT IMPORTATION of 20 cows, 2 bulls, and a number of calves, selected from noted Scotch herds, and including the male and female champions at leading Scottish shows this year. Representatives of this herd won the first herd prize at the exhibitions at—

Toronto, London, and Ottawa, in 1900.

Come and see or write for prices.

Young Bulls and Heifers for Sale, bred from High-class Imported Stock.

Robert Hunter, Manager

for W. W. Ogilvie Co., Lachine Rapids, Quebec.

Ayrshires, Guernseys and Shropshires.

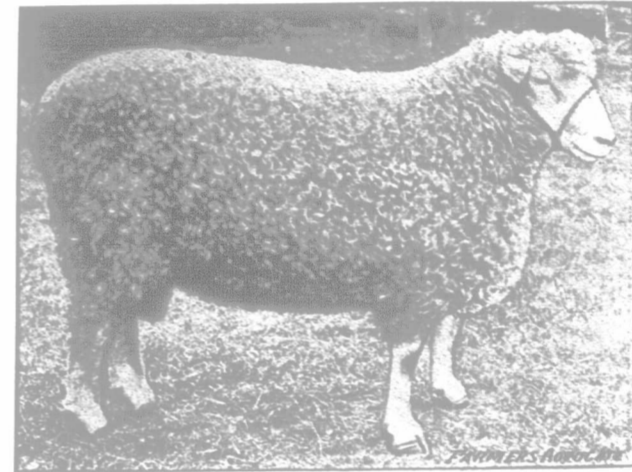


THOSE desirous of purchasing high-class pedigreed stock should write at once for particulars. A few choice Ayrshire and Guernsey bulls now for sale. Address all communications to

ISALEIGH GRANGE FARM, Danville, Quebec.
J. N. GREENSHIELDS, PROP.

WANTED—A reliable and competent herdsman.

. Fairfield Flock of Lincoln Sheep. .



THE largest flock of imported Lincolns and the largest number of Royal first-prize winners of the breed in America. Representatives of this flock won the first flock prize at Toronto last year and this, and the championship at London both years. Over 60 imported sheep now in flock, and over 100 field rams and ewes, purchased in England, to follow soon. A large number of yearling rams and ewes, ram lambs and ewe lambs for sale.

Write us for prices, or come and see.

J. H. & E. PATRICK, ILBERTON, ONT.

LIGHT YOUR HOME WITH Sunlight Gas

The best light in the world. No more expensive than coal oil.

WRITE FOR PARTICULARS TO

The Sunlight Gas Co., Ltd.,

1, LITTLE ST. ANTOINE ST., MONTREAL

SEE TESTIMONIAL BELOW.

C. H. WIDDIFIELD,
Barrister, Solicitor, etc.
Picton, Ont., July 5th, 1900.

THE SUNLIGHT GAS CO., Ltd.,
Montreal, P. Q.

GENTLEMEN,—I am in receipt of your letter asking me about the generator you installed in my house eighteen months ago.

I have used it continuously ever since it was put in, and the longer I use acetylene gas the better I like it. It gives a much whiter and softer light than either coal gas or electric light.

The machine has given every satisfaction, and I am very much pleased with it.

Yours truly,
C. H. WIDDIFIELD.



RAPID-EASY GRINDERS

Will do for you what they are doing for others—grind more grain with the same power than any other Grinder.

Made for use with tread power, sweep power, windmill, or steam engine.

Bradford, October 22nd, 1900.

With your RAPID-EASY GRINDER I have ground 400 bushels of mixed grain in ten hours, and have ground 2,000 bushels of grain with one side of the plates, and they are good yet. The machine runs very easy. It is the only Grinder I ever saw that would grind barley right.

J. THOMAS WATSON.

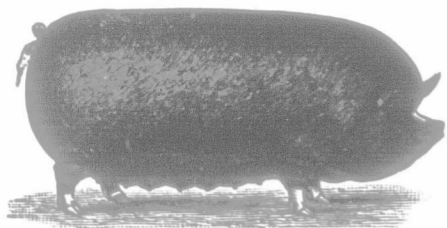
We shall be glad to give you all information. A fine lithographic hanger on application. State power you wish to use on Grinder.

J. FLEURY'S SONS,
AURORA, ONTARIO.

Medals for plows: Chicago, '93; Paris, '89.



PLEASE MENTION FARMER'S ADVOCATE.



Berkshires Large, lengthy, English type. Five first prize boars in service. Spring pigs ready for shipment. Boars fit for service. Sows ready to breed. **GEORGE GREEN, Fairview, Ont.**

SNELGROVE BERKSHIRES

We have for sale some promising young boars and sows of different ages. Boars fit for service, sows large enough to breed. Young pigs from 4 to 8 weeks old. These pigs are got by the prizewinning boars, Colonel Brant 5850, Court Master 7710, and Gallant Prince 7691. Our herd is bred from the best strains of Large English Berkshires. Write for prices.

SNELL & LYONS, Snelgrove, Ont.

BERKSHIRES FOR SALE.

YOUNG boars and sows carrying the blood of Baron Lee 4th, Bright Star (imp.), Enterprise and Highclere, on Bow Park, Teasdale and Snell females, with Allandale Boy 5875 and Royal Lad 3rd 4307 heading the herd. **S. DYMENT, Barrie, Ont.**

Large White Yorkshires.

Am offering during this month a grand lot of boars and sows ready for breeding; pairs supplied, not akin, from show stock; also several sows in pig to imported boar. Young pigs from 2 to 3 months old, all of the most improved bacon type. Registers furnished. Express prepaid. Address:

H. J. DAVIS, Box 290, Woodstock, Ont.

OAK LODGE Type of Yorkshires



We have now on hand a large herd of pigs of different ages, and they are as good as we have ever offered. The winnings of this herd have been greater than all other herds combined at the largest Canadian exhibitions.

All stock shipped to order, fully guaranteed. **Brethour & Saunders, Burford, Ont., Can.**

Belleville Business College.

BELLEVILLE, ONTARIO.

NOW OPEN.

Central Business College,

TORONTO.

Enter any time. Ten teachers. Sixty typewriting machines. Unexcelled facilities for assisting graduates to positions. Write for calendar. **W. H. SHAW, Principal.** Yonge and Gerrard Sts., Toronto.

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Send for the illustrated catalogue for 1900; 152 pages, specially interesting (32nd year). Address—

ROBINSON & JOHNSON, F.C.A.

CENTRAL Business College

STRATFORD, ONTARIO.

A school that is doing the best work in business education in Canada to-day. Our magnificent catalogue gives full information. Send for one. Enter now if possible. **W. J. ELLIOTT, Principal.**



FLEMING'S LUMP JAW CURE
LUMP JAW QUICKLY CURED.

A case of lump jaw in your herd means immediate loss; it may mean the infection of the rest of your herd; it may result in the distribution of the germs all over your pastures. All loss and danger can be positively averted by prompt use of **Fleming's Lump Jaw Cure**. The only radical cure known. Is endorsed by the most prominent ranchers and shippers of the continent. Easy to use. Is applied externally. One to three applications cure. Leaves jaw sound and smooth. Cannot harm in any way. One bottle usually cures two or three ordinary or one severe case. Price \$2.00. Sold by druggists. Can be sent anywhere by mail. Money cheerfully refunded if the remedy ever fails. FREE—Some important reports and an illustrated treatise on Lump Jaw. Write for them. **FLEMING BROS., Chemists, St. George, Ont.**

Bigger Profits

Your Cheese and Butter making will pay you bigger profits if you use **WINDSOR SALT**—pure, soluble, even crystals. Economical to use.

THE Windsor Salt Co., Limited.
WINDSOR, - ONT.

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Summer Hill Herd
HEADQUARTERS FOR THE IDEAL BACON HOG AND EASY FEEDERS.



The largest herd of imported and Canadian-bred Yorkshires in America. Out of 121 exhibits at the leading shows in '99 and 1900, including Toronto and London, we gained 116 awards. Expert judges both at London and Toronto were unanimous in pronouncing our herd far superior to that of our strongest competitors. Won most of the best prizes offered, including first prize for best pen of pure-bred bacon hogs, also grand sweepstakes over all breeds in a class of 13 entries. The foundation of our herd was laid by personally selecting the choicest stock from the most noted breeders in England and Scotland. We have the ideal bacon type—size without coarseness, and easy feeders. Pigs of all ages for sale at moderate prices. Write us for particulars. Telephone, Millgrove, Ont. Telegraph 254 Bay St. S., Hamilton, Ont. **D. C. Flatt & Son, Millgrove, Ont.**

The Razor Steel, Secret Temper, Cross-cut Saw.



WE take pleasure in offering to the public a saw manufactured of the finest quality of steel, and a temper which toughens and refines the steel, gives a keener cutting edge and holds it longer than by any process known. A saw to cut fast "must hold a keen cutting edge." This secret process of temper is known and used only by ourselves. These Saws are elliptic ground thin back, requiring less set than any Saws now made, perfect taper from tooth to back. Now, we ask you, when you go to buy a Saw, to ask for the Maple Leaf, Razor Steel, Secret Temper Saw, and if you are told that some other Saw is as good, ask your merchant to let you take them both home, and try them, and keep the one you like best. Silver steel is no longer a guarantee of quality, as some of the poorest steel made is now branded silver steel. We have the sole right for the "Razor Steel" brand. It does not pay to buy a saw for one dollar less, and lose 25 cents per day in labor. Your saw must hold a keen edge to do a large day's work. Thousands of these Saws are shipped to the United States and sold at a higher price than the best American Saws. **MANUFACTURED ONLY BY SHURLY & DIETRICH, Galt, Ontario.**

EARN MORE MONEY BY HOME STUDY FREE SCHOLARSHIPS TO A LIMITED NUMBER

IN Electrical, Mechanical, Marine, ENGINEERING Stationary or Locomotive

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Catalogue Printing our Specialty.

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Family Knitter

Cheapest, Simplest, Best.

Price, **\$8.00.**

Write for circular.

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CUTS BY ALL PROCESSES

LIVE STOCK A SPECIALTY.

Mother's Help

'Couldn't wash the windows herself, but she could bring mother water and "Sobrite" and that is as good as an extra pair of hands in housework.

Cleans everything. Sold everywhere.

Highest Quality Always.

If you want Dry Goods of the latest and newest kinds, Groceries of the finest and freshest quality, and everything that you Eat, Drink, Wear or Use the best that can be obtained, then trade at the Hudson's Bay Stores.

Have you tried TETLEY'S TEA? It is one of the most fragrant and refreshing Packet Teas in the world. We are sole agents for Manitoba, the Northwest Territories and British Columbia.

Hudson's Bay Stores.

Comfort in COLD WEATHER



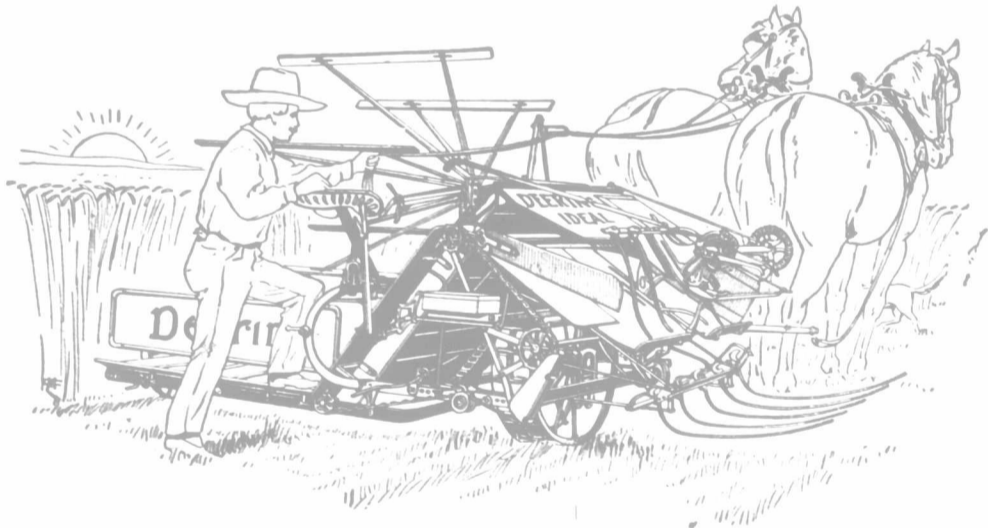
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