

THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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

VOL. XXXVI. WINNIPEG. FEBRUARY 20, 1901. MANITOBA. No. 520

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CONTENTS OF THIS NUMBER.

	PAGE.
WINTER FEEDING OF HORSES	107
PRESERVATION OF SOIL FERTILITY	107
FAVORABLE RESULTS WITH SPELTZ	107
THOSE INFERTILE EGGS	107
A VISION	107
DEATH OF MR. JAMES P. PHIN	108
THE CONSERVATION OF SOIL MOISTURE BY TILLAGE	108
THE LATE MR. JAMES P. PHIN (ILLUSTRATION)	108
COINCIDENCES IN HORSE MEASUREMENTS	108
BRANDON FAIR DATES	108
A COMMODIOUS CATTLE BARN	109
PRACTICAL EXPERIENCE IN SOIL CULTIVATION	109-110
HUMUS AND MANURE	109
MANURE APPLIED ON GRASS SOD	109
SUMMER-FALLOW OR WHAT TO INCREASE YIELD?	109
A SYSTEMATIC ROTATION	109
CLOVER OR A SUBSTITUTE WHAT IS NEEDED	109
SUMMER-FALLOW AND MANURE	110
IMPORTANCE OF UNDERSTANDING SOIL CONDITIONS	110
A GRASS ROTATION	110
EXTERIOR VIEW OF BARN BELONGING TO DAVID JACKSON, NEW-DALE, MAN. (ILLUSTRATION)	109
POTATOES	111
FOR PROVINCIAL FAIR INSURANCE	111
POULTRY AND PET STOCK WINTER SHOW	111
WRIGGED AND FOUND WANTING	112
FARMERS' INSTITUTE MEETINGS	112
OUR SCOTTISH LETTER	113
HOW THE SMITHFIELD SHOW SHEEP "DIED"	113
IMPORTED PERCHERON STALLION, CASTELAR 25043 (42638) (ILLUSTRATION)	113
REPORT OF THE BLOCK TEST AT THE ONTARIO PROVINCIAL WINTER FAIR (ILLUSTRATED)	114
CARE OF DRAFT BREEDING STOCK IN WINTER	114
CARRIAGE HORSE BREEDING	115
SUCCESSFUL PIG RAISING	115
CURING HAMS	115
CARE AND FEEDING OF BROOD MARES AND YOUNG HORSES	116
CURE FOR RINGWORM	116
AN UNREASONABLE REGULATION	116
SOME PERTINENT SUGGESTIONS	116
SEWER PIPE TO EXCLUDE SURFACE WATER FROM WELLS	116
THE SELECTION OF SUITABLE BREEDS OF POULTRY	116
ABORTION AND CARBOLIC ACID	117
A HANDY WIRE TIGHTENING DEVICE	117
SPELTZ, SPELTZ OR SPELTZ WHEAT?	117
A POET'S VIEW	117
CREAMERY BUTTERMAKING—THE CREAMERY DESCRIBED—PASTEURIZING THE CREAM	118
THE COW'S OWN TESTIMONY	118
AYRSHIRES AS MILKERS	118
DAIRYING UP TO DATE—II	119
DAIRYING IN BRITISH COLUMBIA	119
SHORTHORNS AS GENERAL PURPOSE CATTLE	119
SCOTCH WOMAN'S WAY OF FEEDING CALVES	120
A MODEL HOGPEN (ILLUSTRATED)	120
THE TURKEY AND ITS MANAGEMENT	120
DAIRYING IN NORTHERN ALBERTA	121
A GOOD MILKING SHORTHORN	121
QUESTIONS AND ANSWERS:—VETERINARY: ECZEMA IN STEER; CAKED UDDER; REMOVING THE PLACENTA; PILES IN PIGS; WARTS ON UDDER AND TEATS; CEREBRO-SPINAL MENINGITIS IN HORSES; ABORTION IN HIFER; SKIN IRRITATION IN HORSES; SWELLING OF LEGS, WITH INCIPENT DIARRHEA; DEFECTIVE BULL; TUMOR IN HORSE'S NECK; MAMMITS OR GARGET IN COW; DISCHARGE FROM NOSTRILS IN FAST PACING FILLY; BLEMISH ON COLT'S FOOT	121-122
MISCELLANEOUS: WANTED—PRIDE OF THE NORTH POTATORS; 1899 WHEAT FOR SEED; WELLS AND MAPLE SEED; APPENDIX AYRSHIRES; BITTER CREAM; TO RID LAMBS OF TICKS	122
CHATTY STOCK LETTER FROM CHICAGO	122
HOME MAGAZINE.—THE FAMILY CIRCLE	123
THE CHILDREN'S CORNER	123
AN OLD TRASE (ILLUSTRATION)	123
THE QUIET HOUR	124
THE KICKING HORSE CANYON (ILLUSTRATION)	124
GOSSIP	127, 128, 129, 130, 132, 134
CLYDESDALE BREEDERS MEET	127
HACKNEY ASSOCIATION	129
SADDLER AND CARRIAGE HORSE BREEDERS' SOCIETY	129
SHIRE HORSE BREEDERS' ANNUAL MEETING	130
CANADIAN HORSE BREEDERS' ASSOCIATION	130
ANNUAL MEETING CANADIAN HOLSTEIN-FRIESIAN BREEDERS' ASSOCIATION	132
NOTICES	128, 130
ADVERTISEMENTS	105 and 106, 126 to 136

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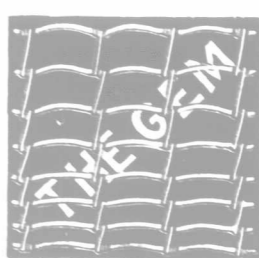
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VOL. XXXVI.

WINNIPEG, MAN., AND LONDON, ONT., FEBRUARY 20, 1901.

No. 520

Winter Feeding of Horses.

With a winter climate such as we have in the West, and a shortage of feed, especially of first-quality stuff, it behooves the farmer to look well to the feeding of his horses. Too often the sequel of conditions such as we have at the present time is a heavy death-rate among farm horses; such, of course, would be lamentable, owing to the great amount of spring work to be soon tackled, and the increase in prices of workable horseflesh. The reasons for such a sequel are not hard to find, viz.: (1) Lack of exercise, and (2) a lack of variety or succulence in the food. A common result is distension and paralysis of the bowels, usually fatal. It should not be forgotten that the digestive tract of the horse differs markedly from that of the cow, and that while roughage in the form of straw, hay, etc., is necessary for both classes of stock, yet lack of exercise and succulent food will surely end in bowel troubles among the horse kind. Rational methods of feeding are to be preferred to *indiscriminate* drugging, one form of which is the use of the so-called condition powders, which, by the way, is a *very expensive* method of feeding *linseed meal* to live stock. The use of linseed, flaxseed, bran and roots is to be recommended in the compounding of a ration. Many farmers seem to think that bran is of little food value, which is a great mistake: it has an excellent effect on the digestive organs, and by the addition of water, in the form of bran mash, becomes a valuable laxative; for young, growing horses bran should never be omitted from the ration. Roots can be fed raw or steamed, either method being very satisfactory. In the writer's experiences in the winter feeding, roots and straw, with a little grain at night, made a wholesome and consequently satisfactory bill of fare, exercise in a large yard being also given. In this respect a low temperature does not injuriously effect horses put out every day for exercise. A recent visit to the big Oaklawn farm of Durham, Fletcher & Coleman, showed the winter ration for the horses to consist of steamed sugar beets, bran and straw, and nowhere can young stock be seen in better condition. In this Province boiled weed seeds and grains, mixed with cut straw, give the much desired variety to the menu: the cooked seeds seem to have a laxative effect. In districts where hay is scarce, large quantities of straw, preferably cut, may be used along with the grain, for working horses, and will be found both economical and satisfactory. Should a horse show signs of being off feed, remove all coarse food, hay and straw until on the road to recovery, or pursuant to the advice of your veterinarian. Sick horses often pick away at hay or straw, and thus consume more than the system is able to properly take care of.

Preservation of Soil Fertility.

In our last issue, editorial reference was made to the important question of the preservation of soil fertility. While the value of the bare summer-fallow as a means of destroying weeds and conserving soil moisture must not be overlooked, still, the fact remains that the fallow, after all, adds no fertility, but rather tends to more rapidly diminish the fertility of the soil, by making available an excess of nitrogen in an easily soluble form, which may be wasted before it can be made use of by growing crops. The lamp of experience should be used to throw light on the best methods of conserving and increasing soil fertility, in which connection the work of two great Experiment Stations, Rothamsted, England, and Geneva, New York, may be cited. Experiments at these Stations have shown that the greatest loss of fertility occurs on bare soil. It was found that the loss of nitrogen per acre on bare soil averaged 280 pounds yearly; on land growing a corn crop, only 90 pounds per acre was needed, and on sod, practically nil. On the bare summer-fallow, 280 pounds of nitrogen was

made available, of which, after deducting 90 pounds necessary for growth of a corn crop, which nitrogen could not be counted as wanted, there was left 190 pounds of available nitrogen, in the form of nitric acid, a very soluble and easily-washed-away form: a very significant result, showing as it does that cropping along with a proper rotation serves to conserve fertility more than does the bare fallow. D. S. M. Babcock, the noted agricultural chemist, commenting on these experiments, says: "To conserve nitrogen, we must keep the soil at work growing crops. The greatest losses on the land are between June and September, the summer heat rendering the nitrogen soluble, in which form it may be washed away by fall rains: hence, some form of crop will save that waste by using the available nitrogen, storing it in the plant and its roots. Bare summer-fallow exhausts land faster than judicious cropping, although the first crop after the fallowing may be a large one, due to the great amount of available nitrogen, such amount being far in excess of the crop needs, hence the loss. The greatest loss will be found to be in the black soils, which usually contain lots of humus. The more fertile the land originally, the greater the losses may be." In this issue we publish the opinions of a number of practical farmers on the best methods of handling their land. It will be noted that these letters cover a very wide range of territory, including almost every variety of soil.

Favorable Results With Spelt.

In reference to your inquiries re spelt, the Russian grain recently introduced into Manitoba, although last season was exceptionally hard on all kinds of grain, I cannot but speak very highly of our first trial of spelt. We got eight bushels of seed, but did not sow it until the 15th of June. On account of the lack of moisture, it did not germinate until the rain came the first week in July, yet, although so late in coming up, and having been sown on poor land, it came on very rapidly, and we harvested it the first week of September. It was left in stook 8 days, then stacked and threshed on the 15th of September. The yield (45 bushels per acre) was surprisingly good under prevailing conditions. The grain should be cut when the head is beginning to change color. The straw will be still green, and must be bound in small sheaves and put up in long stooks, so that it will dry out thoroughly. When threshed the straw is equal to the best hay, as we have tested it. The grain somewhat resembles barley, only larger. It is claimed that for feed it is as strong as the best corn, and judging from what we fed, the horses prefer it to any other kind of grain. I have read in your issue of the 5th of January a communication from the Province of Ontario in connection with tests made with spelt, in which they did not prove satisfactory. Notwithstanding this, I have not changed my mind in regard to the growth and real value of this grain to the Manitoba farmer, and have so much confidence in its merits as feed that we will sow at least 100 bushels this spring. One of our neighbors sowed some four acres on good land, and had from three to four tons of straw per acre, the yield of grain being equally good. We will have a small quantity left for sale.

D. SUTHERLAND.

Springfield Municipality, Man.

Those Infertile Eggs.

I believe that the columns of your paper are open to subscribers, and that a fair criticism or discussion of any subject is enlightenment for all. In your issue of Jan. 21st there appears a letter under the heading, "Fertile or Infertile Eggs—Which?" In 1885 I was in the northern part of Alberta, and eggs were eighty cents per dozen. I do not for a moment doubt but that Mr. Powell is sincere in what he writes: still, it is almost impossible to believe that an egg that had been under a hen for six weeks would be palatable to the taste. I would be inclined to think that those six-week eggs were in some mysterious way removed and fresh ones cooked instead: either that, or else there is no material change in the quality and price of eggs in the Territories since 1885. I shall certainly test Mr. Powell's experience at first opportunity, but a small boy shall be asked to sample the eggs.

Manitoba.

W. G. POTTER.

A Vision.

WHAT THIS CENTURY MAY BRING.

Sitting by the stove this intensely cold evening, the first of the year, the first of the century, looking back upon the past century, comparing it with the century before, we are led to exclaim, "What hath man wrought? What heights and depths of research, what grand achievements, what glorious results!" Great discoveries have been made in all branches of science. But in no branch of science has greater discoveries been made than that relating to life in the human, the animal or vegetable world. The source of disease in these three kingdoms have in nearly every case been discovered, and in a great many cases the remedy. What vast advancements have been made in farming, improved machinery, improved methods, improved stock, improved grains.

Judging from the advancement made in the past fifty years, I look forward into the twentieth century, and this is what I see: I am not a prophet, nor the son of a prophet, but, judging from the past, I see, before the century is out, all railways, all canals, all steamships, all elevators, mines, etc., controlled by the Government, all the great monopolies destroyed, and the Government controlling. I see the farmer enjoying the fruits of his labor (not robbed and defrauded on every hand), every farming industry advanced, and every farmer taking an intelligent interest in his work, because he knows he will be rewarded. The Government controlling the railways and steamships and canals will give him (the farmer) transportation rates at lowest cost (no large railway monopolies to be made rich). When the farmer brings his wheat to the elevator, it is with the assurance of getting full value for his grain (there will be no middlemen to be enriched). The farmer will fatten his stock, make butter and cheese, or it will be made for him; he will raise poultry of the best, and produce eggs and fowls of the choicest, because the Government will find a market for him, and sell to the best advantage without enriching itself, thus giving the farmer the advantage. Veterinary science will investigate and search till the bacteria that destroys so much life will be annihilated, thus saving thousands of dollars to the farmer each year. Medical science will study and investigate the human system and its ills and remedies, till disease will not prey upon the human system. Instead of man's life growing shorter, it will grow longer, and his capacity for enjoyment will be increased a hundredfold. Agricultural science will search and delve until it thoroughly masters the disease that destroys so much of the vegetable kingdom, and so thoroughly will it be annihilated that it will be known only in history.

Agriculture will be one of the best-studied sciences known. Frost and drought and all these difficulties will be overcome, and instead of the land yielding fourfold it will yield an hundredfold. I see Manitoba and the N.-W. T. covered with mighty fields of grain, magnificent cattle roaming the field of luxuriant grass which science has helped nature to produce: beautiful homes dotting the country, and peace and prosperity reigning in every home. British Columbia, with her vast mines of wealth developed, mighty forests of fruit and fields of vegetables, her beautiful dairy cattle scientifically fed to do their utmost. The Eastern Provinces, with their beautiful homes still more beautiful, their fields and orchards and gardens and stock all of a superior class, every person taking a pride in his farm and home, and from the Atlantic to the Pacific filled with a contented and happy people, numbering not 5,000,000, but 75,000,000.

Judging from the past achievement in agriculture during the last 30 years, from the rude cradle to the self-binder, we dare not say what will be even during the next fifty years. There is no doubt but electricity will play an important part in agriculture in the coming century. It will in all probability be yoked to the plow, to the wagon, to, in fact, nearly everything that will reduce physical labor. The readers of the *ADVOCATE* of to-day, including myself (except in prophetic vision), will not see the accomplishment of such wonders, but our children's children will enjoy these blessings just as we enjoy privileges and blessings our forefathers could not conceive of.

East Assiniboia.

J. B. POWELL.

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Address—THE FARMER'S ADVOCATE, or
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Death of Mr. James P. Phin.

Many readers of the FARMER'S ADVOCATE will learn with regret of the death, on January 24th, of Mr. James P. Phin, of Hespeler, Ontario, widely known as a prominent and successful importer and breeder of Shropshire sheep. Mr. Phin was born in 1841, on the farm known as "Kennaquhair." He was educated at the public school and the Rockwood Academy, and was for several years a successful teacher, being for three years principal of one of the schools in Waterloo County. On his marriage at the age of twenty-one, he bought the fine farm formerly owned by Mr. John Warner. On this he erected the elegant residence and modern outbuildings now known as "The Grange," making the place one of the most complete farm homesteads in Ontario. He gave the farm his personal supervision, farming it well on scientific principles until a year ago, when his son, George, assumed the management. Mr. Phin was closely identified with the stock-raising industry of the country, having been for many years a breeder of Shorthorn cattle and a successful exhibitor at local and central exhibitions. For eighteen years he was a celebrated sheep-breeder. Importing and breeding pedigree animals, he made his Shropshire flock widely known. He took a lively interest in horticulture, and his large and well-kept apple orchard was admired by all who saw it. He was vice-president of the North Dumfries and South Waterloo Farmers' Mutual Insurance Company, a director and manager of the Guelph and Ontario Investment Savings Co., a Justice of the Peace for Hespeler for 30 years, and at intervals county councillor. He was twice married, nine children being the fruit of the first union, seven of whom are living, and of the second family of seven children, six, with his widow, survive him. He was an honorable, upright and intelligent man, a good citizen in every relation, highly esteemed and respected wherever known, and his career as a farmer and stock-breeder was eminently successful and profitable.

The Conservation of Soil Moisture by Tillage.

THE RESULTS OF EXPERIMENTS MADE DURING THE PAST SEASON IN MANITOBA AND THE NORTHWEST TERRITORIES BY FRANK T. SHUTT, M.A., CHEMIST DOMINION EXPERIMENTAL FARMS.

Every province, every district, looked at agriculturally, has its own peculiar problem to solve. Thus, the methods of culture, the character and order of rotation best suited in one part of the Dominion, may not, and frequently are not, those desirable or necessary for another portion. The principles underlying intelligent or skillful farming are the same the world over, but their application must vary according to the nature of the climate (rainfall, maximum temperature, frost, etc.) and of the soil of the locality, as well as certain other factors of which we need not speak.

Over large areas in Manitoba and the Northwest Territories, nature has furnished the farmer with a soil exceedingly rich in plant food—so rich, indeed, that it has been termed a mine—a soil from which for many years drafts may be made by crop succeeding crop without appreciably diminishing its fertility. The use of commercial fertilizers for these soils is practically unknown, and probably will remain so for a very long time to come. But we are all aware that, important as soil fertility is, there are other factors necessary if a maximum yield of the best grain is to be obtained. For such, weather conditions must be favorable. Thus, for example, there must be a sufficiency of moisture to draw upon when the needs of the plant for water are great; that is, during the period when leaf and stem are forming and there is a laying up of material which is to find its way into the seed as the grain matures.

What practical farmer does not know the value of a moist seed-bed for the germination of wheat, and an ample rainfall during May and June? This



THE LATE MR. JAMES P. PHIN.

is the better realized when we learn that an acre of wheat requires more than 300 tons of water to bring it to perfection, and that the greater part of this water is necessary during the earlier stages of the plant's growth. The important question for the farmers of the Northwest is, therefore, are there any practical and feasible methods by which he can control soil moisture (for the control of the rainfall is beyond his power)? Can he store up moisture against a season of drought? Can he so affect the tilth of his soil as to make it more retentive of the moisture for the use of the crop? We answer, unhesitatingly, yes. Science and practical experience have alike demonstrated that this can be done by summer-fallowing and by preserving, through cultivation, a dry earth mulch which will prevent excessive surface evaporation.

To furnish the farmers of the Northwest with data that might serve to illustrate this fact, we instituted last year a series of experiments upon soils in fallow and in crop at the Experimental Farms at Brandon, Man., and Indian Head, N.-W. T. The plan of work may be outlined as follows: Two areas on each farm, having, as far as possible, soil of a similar character, were selected. Area or plot "A" was in fallow in 1900 and in crop in 1899; plot "B" was in crop in 1900 and in fallow in 1899. The samples were taken, in specially-made canisters, at two depths: 1 to 8 inches and 8 to 16 inches. The first monthly collection was made in May, the last in November. Immediately on arrival of the canisters at the laboratory, the percentage of moisture in the soils was carefully determined. From the data so obtained and the weight of soil, the amounts of water in tons and pounds per acre were calculated. A summary of the results is presented in the following table. The complete and detailed data of this experiment are appearing in the forthcoming report of the chemical division of the Experimental Farms. In the account there given, full meteorological notes, including rainfall at Brandon and Indian Head, also appear. These were furnished by Mr. Bedford and Mr. MacKay, to whom I am indebted for most valuable assistance in this investigation.

Moisture: Amount per acre, to a depth of 16

inches, in soils at Brandon, Man., and Indian Head, N.-W. T.:

Brandon, Man.				Indian Head, N.-W. T.			
Date 1900.	In fallow '00 In crop 1899.	In crop 1900. "B"		Date 1900.	In fallow '00 In crop 1899.	In crop 1900. "B"	
	Tons.	Lbs.	Tons.		Tons.	Lbs.	Tons.
May 11	427	637	626	1,686	May 8	540 ^a	1,887
June 11	418	333	749	805	June 8	507	889
July 11	607	1,382	673	1,740	July 8	394	354
Aug 11	644	604	440	565	Aug. 8	550	776
Sep. 11	621	984	639	1,068	Sept. 8	578	533
Oct. 11	571	1,017	607	1,951	Oct. 8	608	1,641
Nov 11	635	1,916	606	1,781	Nov. 8	625	306
							618
							789

Brandon.—It will be observed that the soil in fallow in 1899 ("B") contained in May, June and July, 1900, more moisture than the soil that had been cropped in 1899. Thus, from the above figures we obtained the following results:

	Tons.	Lbs.
May 11, 1900—Excess of moisture per acre in land fallowed ("B") in 1899	199	1,029
June 11, 1900—Excess of moisture per acre in land fallowed ("B") in 1899	331	452
July 11, 1900—Excess of moisture per acre in land fallowed ("B") in 1899	66	478

The large excess of moisture in the 1899 fallowed soil (B) it will be seen rapidly fell off between June 11 and July 11. No doubt this was due to two causes: First, the greater absorptive and retentive power for moisture of the soil "A" (in fallow, 1900), rainfall of the month being between 4 and 5 inches; and secondly, the large moisture requirements of the growing crop on soil "B."

In a still more marked manner do these causes affect the moisture content from July 11 to August 11, so that we find at the latter date a reversal of the condition first recorded, and soil "A" now contains 204 tons more moisture than "B." This is easily explained by the fact that the draft upon the soil moisture by the growing crop on this latter plot ("B") would at this time be at its maximum.

During the later months of autumn there is evidently a tendency for the moisture content of the soils to approximate. This, the writer thinks, is largely due to the abnormal character of the season, the autumn being unusually wet and evaporation slight. However, notwithstanding this, the soil in fallow, 1900 ("A"), contained in November about 50 tons of moisture more than the cropped soil ("B"). Under more normal conditions, judging from our early results, we might expect a much larger excess of moisture at the close of the season in the fallowed soil.

Indian Head.—The results from these soils are, in a large measure, similar to those obtained from the Brandon samples. Thus, we find for the first two months of the investigation:

	Tons.	Lbs.
May 8, 1900—Excess of moisture per acre in fallowed land ("B") in 1899	139	804
June 8, 1900—Excess of moisture per acre in fallowed land ("B") in 1899	177	602

The July samples gave data in the same direction as those of August for Brandon, namely, less moisture in the cropped soil "B." The causes, we may suppose, are the same as those already indicated as exerting an effect at Brandon, the lighter rainfall at Indian Head accounting for the earlier appearance of the deficiencies in soil moisture in the cropped land "B." This condition continued to prevail throughout July, August, and part of September. Thus, we have from the foregoing table:

	Tons.	Lbs.
July 8, 1900—Excess of moisture per acre in fallowed land, 1900	92	1,830
Aug. 8, 1900—Excess of moisture per acre in fallowed land, 1900	16	257
Sept. 8, 1900—Excess of moisture per acre in fallowed land, 1900	82	473

During the last two months of collection the amounts of moisture in the cropped and fallowed lands, as in the case of the soils at Brandon, tend to approximate, but, as also observed in the Brandon soils, a slight excess of moisture was present in the November samples of the land fallowed in 1900.

This investigation has been eminently satisfactory and yielded results of great value. They are worthy of careful and thorough study, for they are capable of being most instructive. The past season, and especially the earlier part, was a particularly favorable one for this experiment, the drought that prevailed during the spring and early summer months emphasizing in a most marked manner the beneficial effect of the previous year's fallowing. The data are, in a large measure, confirmatory of one another, and at both points of observation furnish the strongest evidence of the value of fallowing as a means of storing up moisture for the crop of the succeeding year.

Coincidences in Horse Measurements.

In nine cases out of ten it will be found that the height of a horse at its withers is within a small fraction of 2½ times the length of its head. It is very rarely that a horse's height is 2½ times the length of his head. In the same connection it is interesting to note that the length of the head of a horse is almost exactly the same as that from the stifle joint to the hock, and from the point of the hock to the ground.

Brandon Fair Dates.

The dates of the Brandon Fair have been fixed for the week preceding Winnipeg Industrial, viz., July 23-26.

A Commodious Cattle Barn.

The illustration appearing on this page shows the cattle barn on the farm of David Jackson, of Newdale, Manitoba. This entire barn is devoted to cattle, as he has, in addition to it, a large horse stable and a granary, which are built at considerable distances apart. This barn is 112 feet by 38 feet, 9-foot stone basement wall, with natural bank along the north side, from which there are two driveways into the barn. The frame superstructure has 16-foot 8x8 posts, 2 1/2-foot 8x10 purline posts, and the whole space is available for the storage of hay and fodder. A large water tank is situated on this floor, a grain crusher stands 8 feet above the floor, with a hopper on floor level, from which it is elevated to bin at top of barn, with self-feed, into the crusher, and the chop falls into a bin in feed passage below. Pump and crusher are run by geared 14-foot windmill. The ground floor is laid out with an 8 foot passage running lengthways of the entire stable, with a row of cattle on each side, facing the outer walls. This wide passage permits a team and wagon or flat sled to be driven right through the stable, to take the manure direct from the stable to field or heap. Four-foot feed passages run the full length of the stable, in front of cattle, with water troughs above the mangers, which are supplied by pipes from the water tank on the upper floor. The troughs are provided with covers, to keep them clean and to allow the cattle to drink at the will of the feeder. The floor is planked throughout, and the stalls are double, 6 feet wide, with accommodation for 60 head of mature cattle. As will be noticed, the south side of the stable is well lighted with a number of good-sized windows, which also provide ventilation, but improvements are being planned in this particular. The herd consists of Shorthorn grade cows, and a pure-bred Ayrshire bull is used.

Practical Experience in Soil Cultivation.

HUMUS AND MANURE.

I am in receipt of your questions, and desire to say something in reply, yet I fear that my experience in Manitoba has not been long enough to give that something much weight. However, long study of farm problems in Ontario and in the States, supplemented by a short experience in Manitoba, has given me some clear convictions on the issues raised. These convictions were strong enough to lead me into the expenditure of labor and capital, and hence may be of value to others.

Close watching of the crops on my own farm during the past two seasons shows: (1) That when there is considerable root fiber, either from more recent breaking or from persistence of timothy turned under some years ago, the crops on that land have been uniformly good; (2) that where the land in the slight depressions is richer from washing and blowing from the knolls, though here there may be no root fiber, the crops have been equally good. That the presence of humus, by retaining moisture and providing nourishment from decaying stems and roots, adds greatly to the yield is too apparent to need argument. That continued cropping without returning more than one-fiftieth part of that taken from the soil will exhaust is a self-evident axiom. Not even is the straw returned, but burned. In some cases not even is the stubble returned. "An enemy" hath now invented a stubble burner for fear we might put the inevitable a little farther off by returning the stubble. However much money you have in your pocket, you cannot go on forever taking out unless you put some in. However rich our wonderful prairie soils are, every crop taken therefrom without returning an equivalent reduces that richness by that much. In England there are to be found lands which have been under cultivation for a thousand years and to-day produce crops the like of which we never see. Why? Because the restoration of as much as has been taken has been reduced to a science.

Thus, I believe I have diagnosed the troubles of my patient (that is, my farm), and find it to be in the first stages of a serious sickness which will, sooner or later, result in death (that is, my financial death) if the proper remedies be not applied. Many a patient has been lost because the doctor was not called in soon enough. That this may not be my case, I want the doctor at once.

What are the causes of this land sickness? The land has been pulverized, not by a railroad crash which pulverizes flesh and bones, but by too severe cropping; it dries out and blows; it is starved, has not been fed the stem that has borne the golden grain has been fed to the flames rather than to the hungry land. Is this overdrawn? No, this is precisely the present condition of all the medium and lighter lands of Manitoba which have been under tillage from ten to twenty years, and the heavier lands are going that way.

What are the remedies? *Humus* and *manure*, *manure* and *humus*. Which first? *Humus*, because it costs less and can be secured over large areas in comparatively little time. I know of no

way to secure this quickly except by seeding down. When I see my teams hauling manure and note the very, very little surface covered in a week, the time when my whole 640 acres shall be thus fed grows dim in the future. Timothy has done much good, and the humus has remained for seven years after breaking it up. I am trying Brome grass. Began only last spring with 11 acres, hence my experience with it counts nothing. However, I shall give it a good trial and endeavor to put in something like 25 acres every spring. Neighbor Bedford, of the Experimental Farm, has wonderful faith in it, and he has pretty thoroughly tested it. Some say it is hard to get rid of Brome grass. For the purpose of supplying humus it is possibly more valuable for its persistence. It is said that Brome hay, when heavy, is hard to cure, owing to the abundance of leaves and close packing on the ground. I think of mixing some Native Rye grass with it, as in this respect it is just the opposite of Brome. Have any of your readers tried this? If so, please get their experience for us. Some one will ask, "If timothy has done well with you, why not try more of it?" Well, I am a little afraid. The timothy seed sown years ago on my farm came from Ontario, and Canada thistles came with it. They are altogether too persistent to suit us.

W. WOLVERTON,
Cornwallis Municipality, Man.

MANURE APPLIED ON GRASS SOD.

The question you ask, "What is the most profitable and practical way to retain the soil's fertility and productiveness?" is becoming a more interesting one in this Province than it was a few years ago. The only way I know that it can be done is by keeping enough live stock on the farm to manure a part of it every year, and seeding down enough of it with grass every year to keep a certain amount of decaying sod always in the soil. I am well aware that many good and successful farmers consider that summer-fallowing every second or third year will keep the soil in good con-

SUMMER-FALLOW OR WHAT TO INCREASE YIELD?

The decrease of yield of grain may now be considered a fact staring the farmer in the face, as well as touching his pocket perhaps the most direct way to his feelings. How are we to remedy this? It does not seem to your correspondent that the fertility of the soil is much lessened. If this is the case, the cause must lie in the mechanical condition. In this wind-swept country there is a necessity of moisture to cause growth, and a stronger need for something to conserve it as well as prevent the drifting of the soil.

This opens the question for discussion of how this can be best attained? To retain moisture we must, by some mechanical means, prevent its evaporation. The most practical way appears to be summer-fallowing. To do this in the best way seems to me to encourage the weeds to start as early as possible by some sort of surface cultivation (say gang-plow or cultivator); then, when weeds are in soft or succulent condition, plow them well under, so that they are sure to rot, and not make tubes of them to dry out any moisture that is in the soil, as is the case if allowed to mature. Then follow with harrow as soon as possible (say every two or three days) to fine down the surface, preventing evaporation and packing the soil at the same time, repeating the harrowing as weeds appear. I have always been in favor of land-rolling to firm the soil, and think a land packer—not such as are on the market, but one heavy enough to leave its mark on the growing crop, showing where the moisture has been preserved—would be a very valuable adjunct to the ordinary system of fallowing. In addition to good cultivation, we should surely utilize all our manure (preferably well rotted), to avoid weed seeds to pay back to the soil something in return for what it gives us. Many of your readers will recollect what happened to a great portion of Ontario and Quebec farmers while they persisted in selling everything off the farm without returning anything to the soil, until they were compelled to change their system of farming and begin manuring. The conditions there and here may not be quite the same. Still, if we have been given a better inheritance, the greater reason there is that we should husband it carefully.

Indian Head, Assa. "D."

A SYSTEMATIC ROTATION.

I attribute the poorer crops on old, worn-out land more to the mechanical condition of the soil than exhaustion of fertility, and for such land would recommend the following treatment: First, a good summer-fallowing; not the old cut-and-cover style. Harrow in the fall or spring, to start weeds, then plow well, even going 1 or 2 inches deeper than it has been plowed before. I have noticed that on stiff prairie, such as we have in this neighborhood, that in dry seasons the loose soil bakes on the subsoil, and that after a few years of letting the plow run in this subsoil, there will be only an inch or two to turn over. This crusted subsoil wants breaking up and exposing to the atmosphere. If soil is very much exhausted, a light coat of rotted manure will do good.

After plowing once, keep up surface cultivation to kill all weeds. Next spring sow wheat with press drill, and with grass-seed attachment sow 6 pounds of timothy seed per acre. After seeding, give one stroke of light harrow. Take off one crop of hay, then pasture, and plow the following season. After this, keep up rotation of crops, with good cultivation, and no more trouble need be feared. Grass should be used as a preventive more than a cure for exhaustion of the soil. Old, worn-out land will not raise a paying crop of hay, and the poorer the hay crop, the better the weed crop.

With a proper crop rotation from the commencement, summer-fallowing can be dispensed with. I would recommend two or three crops of wheat, then oats, followed by barley, with manure, then wheat, followed by timothy, then pasture and plowed again. The farm should be fenced around; then with a little planning and system, it can be managed by moving a portion of fence each year. I have used green manure, put in from the stable, with good results, but this year, owing to weeds of last season, I am piling up and heating. I would always manure after oats, to be followed by barley.

Pembina Municipality, Man. F. BOLTON.

CLOVER OR A SUBSTITUTE WHAT IS NEEDED.

I have, on some former occasions, told you that I was altogether out of my element in attempting to write a letter for the press, but, at the risk of being charged with egotism, I am sending you a few thoughts upon a question of the very greatest importance to the people of this country: the preservation of soil fertility. I quite agree with you that this is a question of great and ever-growing importance. We have only to look to the older-settled parts of the American continent and learn what will be the result should we go on as we are doing, depending wholly upon wheat-growing. There can only be one result: poorer yields, until the ground will not yield a sufficient crop to pay the farmer for his labor. What is the



EXTERIOR VIEW OF BARN BELONGING TO DAVID JACKSON, NEWDALÉ, MAN.

dition for growing grain, but so far as I can learn, every newly-settled country has had that idea to begin with, and has had to give it up sooner or later for a rotation which put manure and sod back into the land. This can be done in this Province by dividing a farm into six fields, and seeding one field with grass every year. The year after seeding, a crop of hay can be taken from the field, the second year it can be pastured and manured, and the third year plowed up. It should then be in condition to grow three crops of grain without the soil being drifted by the wind, and without growing many weeds. Since I have followed this plan I have never had to take a shoveful of lamb's-quarter seeds from under the machine while threshing. In '88 I saw machines running on fields that had been fallowed the year before, where it kept a man busy shovelling seeds all the time. I have always made a practice of drawing all the winter's manure on to the field I was going to pasture the next summer, every day as it was made, and the summer's manure whenever I could get time to draw it out, and it does not seem to cause weeds. I think that the cattle trampling over it tread the seeds into the ground and make them grow, and then they eat off the weeds with the grass.

I have tried timothy, native rye grass and Brome (the latter only on a small scale), and have found a mixture of timothy and rye grass to suit this purpose best. It gives a good crop of hay when there is a reasonable amount of rain, makes good pasture, and is easily killed by one good plowing, followed by disk harrows. I have always succeeded in getting a good catch of grass by mixing the seed with the grain and drilling it in, excepting last year, when I only got a thin catch on what I sowed with wheat, and none at all where I sowed it with barley. It sprouted and came up when the weather was so hot and dry, and died before rain came. As a general rule it is safest to sow it early with wheat.

CHAS. E. IVENS,
Wallace Municipality, Man.

remedy? We think more stock, and more of the crop returned to the soil in the shape of manure, and along with the manure, seeding down to grass and feeding as much of this as possible on the ground, and that cut for hay returned to the soil as manure. We think this method of farming would have a double effect. It would keep up the fertility of the soil and retain humus in the soil. Speaking about manure, one authority says that the dung-heap must be considered the farmer's sheet anchor, and nothing should be left undone to increase its quantity and improve its quality. Another authority says that farmyard manure, when applied in sufficient quantities, is the best manure which can be employed alone, inasmuch as it contains all the elements required to nourish every kind of cultivated plant. Our experience in the East has always been that when we worked the land longer without seeding down with grass, that we found we had lighter crops, and very much greater difficulty in getting a good catch of grass when we did seed down, the rotted sod becomes worked out of the land and humus is gone for the time being, so that we have to replace it before the soil will again do its best.

What the best grass for this country is, I think, yet an unsolved problem. Some recommend Brome grass, others recommend native rye grass. But, in my opinion, neither fills the bill. What we want in Manitoba is something that will take the place that clover does in the East and in other countries. We require something of the nature of the clover, that we can turn under as a manure. It will be clear to all that we cannot make sufficient manure to go over the whole of our land. The question then arises, what are we to get as a substitute for barnyard manure? I know of no question of more importance to the farmers of Manitoba to-day than this one, and I think that it is one that the managers of the Experimental Farms should never lose sight of until they have found something that will do for Manitoba what clover does for other parts of our country.

JOHN RENTON.

Winchester Municipality.

SUMMER-FALLOW AND MANURE.

The question of how we should preserve the fertility of the soil is one of vital importance. I will not advance any theories, but will confine myself to what I have noted from personal experience.

What is good treatment for light soil would not answer for heavy. We all know that new land, in the hands of a good farmer, can be kept up to its standard of fertility. For instance, in an average year a piece of new land, properly broken and backset, harrowed well down, and sown the following spring, will yield, to put it at a fair average, 25 bushels per acre. The land then plowed in the fall a little deeper, will give the following spring an average of 20 bushels per acre, with probably a lighter crop the following year, which goes to show that something must be done, for if we keep on, the yield will not pay working expenses. However, it has been found advantageous, after the third crop of wheat on new land, to sow oats, plowing in the spring, when a good crop generally results. In most cases it is customary to grow another crop, either oats or barley, as the native weeds begin to get rather plentiful. Then the wisest course is to summer-fallow, by giving the land a thorough good plowing when the weeds are in bloom, and cultivating to kill those that keep growing, until the frost comes and stops the growth. Then in a favorable season the yield has been sometimes over the thirties.

When we have started to summer-fallow our land, then *farming* begins. The old way, "cut and cover and slash ahead," is past. Every furrow must be turned over, every weed turned under, or else more weeds result, reducing the yield and exhausting the soil. I ascribe the poorer yields on old land to the fact that the food that the grain needs is becoming exhausted. We have found when a piece of land has become poor, that a good coat of manure the winter before summer-fallowing restores it to its old-time strength for one crop of wheat. Then we have found the second crop to be probably 5 to 10 bushels less, while the third crop, being oats, we get a good return. We have then summer-fallowed. By manuring direct from the stables we have been able to restore the land to its old-time productiveness. As a proof of this, we have a piece of land (that has produced 30 bushels per acre) that has been in cultivation since 1881, and I believe it is in better heart now than it was the first season it was broken.

Grass seeding is a good way to restore lost energy, because after land is worked for a number of years, the roots and fiber get worked out and there is great danger of drifting.

We have had most experience with timothy; have taken off two and three crops, and then broken and backset it and treated as new land. The result has been a good crop of nice clean grain and good strong straw, the yield, however, not being as good as on the virgin soil. The best results we have had from timothy have been when it has grown two crops of grass and then been broken and backset, the land not being baked, and is more easily worked. This is a country where every man is trying to find out the best way to get the most out of the land and still keep it producing. Every man has to work his land to the best of his ability, so no hard and fast rule can be laid down, as soil varies according to locality. In closing this letter, I must say that I am strongly in favor of

manure spread direct from the stable. However, that is another subject. W. P. MIDDLETON.
Elton Municipality, Man.

SUMMER-FALLOW AND MANURE.

I consider the poorer yields on old land are chiefly due to lack of moisture. Last year in this district the crop on old land, in nearly every case, was very poor, owing to the spring and early summer being extremely dry. Old land seems to have lost its power of retaining moisture. Last year crops on summer-fallow and new land were the only ones worth much, while in 1889 nearly all the old land raised excellent crops, in some cases better than summer-fallow, on account of there being plenty of rain. Summer-fallow grew too rank and was beaten down by early storms and did not rise again, so it did not fill well, consequently the yield in some fields was rather poor.

It seems to me that old land has not lost very much fertility, but has lost its power of holding moisture, therefore we must cultivate our land so it will draw more moisture from below, for we cannot always get it from above. I have a piece of land that has been under crop every year for 20 years, and last year was the first bad crop. It has been cropped with wheat, oats and barley. In 1889 this field averaged about 25 bushels of wheat to the acre. Old land is often very weedy, and in a dry season the weeds soon get ahead of the grain. In many fields last year there was nothing but weeds. Now that we have nearly all our land under cultivation, it would be best to summer-fallow from 40 to 80 acres each year, 40 acres for a quarter-section and 80 acres for a half-section. I have found that once plowing for summer-fallow is better than twice. Let the weeds grow up to a good size, but be careful not to let any go to seed; then plow a medium depth, and be sure to draw the weeds well under with a chain or weed rod; then harrow well to get the land solid and to prevent any more weeds getting old enough to mature seed. This I find puts the land in good shape for a crop of wheat the next season, and will raise a fairly good crop even if the season should be extremely dry.

In regard to grass, there has not yet been any great quantity of cultivated grasses grown. Timothy has generally done fairly well. Some are trying Brome, but it seems more difficult to get a good catch of it than timothy; but I think the greatest trouble is on account of sowing grass seed on too old a soil. As it is sown with a grain crop, the grain starts earlier and stronger than the grass, and in a dry spring the grain uses up the moisture that is near the surface, consequently the grass has no chance to make a start. I would recommend sowing grass seed on summer-fallowed land. By this there would be sufficient moisture to germinate the seed and save any disappointment that way, and the land would be clean, or should be, and would raise a good crop of hay, and not be half weeds, as is too often the case with the first crop when seeded on old land. I would recommend one or two crops of hay and one year of pasture, which would keep the land in fine shape and keep down all noxious weeds, so that it would not be necessary to tramp for so many days through the growing crop in the early summer, as some do, looking for bad weeds.

If we seed down for pasture, we must divide our farms into fields. Fence wire is not very expensive now, and we will have to come to this sooner or later, for nothing pays better than stock—that is, good stock. Cattle are selling high and are likely to for a good many years to come. My idea in fencing for mixed farming would be to fence into 4 or 6 fields for a quarter-section, with a lane down the center to the farthest field.

In using manure, have it well rotted before taking to the field. I have tried it all ways, but the best results I ever got were from drawing it out in the fall and spreading evenly on the top of land (I mean old land that was plowed). This gave fully better results than plowing it under in the fall, for I tried it side by side. Wheat on this was a fine crop. I have tried taking it right from the stables in winter, spreading on stubble land and plowing it under in spring for barley or oats; but it is far too strong—keeps the land too open and loose, and nearly always is full of weed seeds. I cannot use manure on summer-fallow, as my land is heavy and it makes the wheat grow far too rank, with soft straw that will not stand up to ripen.

If I were breaking up a new farm, I would take off two or three crops of wheat; then oats and barley, one crop each; then summer-fallow and wheat again for two crops, followed by grass, if needed. If we have a large acreage under cultivation, we must summer-fallow to keep the land clean, and some autumns it is impossible to get the land ready for spring if we have had it all in crop.

S. NORFOLK Municipality, Man. D. MARWOOD.

IMPORTANCE OF UNDERSTANDING SOIL CONDITIONS.

Your persistence in keeping prominently before your readers the live question of soil cultivation and the preservation of soil fertility, is a laudable one, and deserves the support of every one who can in any way aid in ventilating the subject. No question which affects the material welfare of man is so intricate and so surrounded with so much that is not well understood as that which relates to the

tilling of the soil and the production of food; and perhaps it would be safe to say that on no other questions are so many people ready to pass judgment, give opinions, and lay down theories as to the right and wrong way of doing things. What adds to the difficulties surrounding questions relating to soil cultivation is the different characteristics of soil.

The experiences of the past year, a year abnormal in its weather conditions, commencing with a beautiful spring, peculiarly favorable for seeding, but sadly deficient in moisture during the growing period, furnishes a field for enquiry not at all new or startling, but presented in a new and emphatic manner.

Viewing the result of the year's operations, though on the whole unsatisfactory, there were some fields which stood nature's test and produced satisfactory results. What causes led to good results in these cases? Were the fair yields of some fields due to the fertility of the soil or to the mechanical condition of the soil? If due to the latter cause, what process of preparation did that soil undergo, first, as to that particular crop, and second, as to the previous treatment? Is the treatment that produced good results under conditions similar to last year the best to follow under all conditions? We hear much said about the treatment soil needs for a dry season, and *vice versa*, but inasmuch as we have no means of ascertaining in advance the character of the season, what we need is to enquire into the principles that govern production, so as to reduce the adverse effects of abnormal weather conditions to a minimum. The past season has demonstrated quite clearly that as yet in Manitoba small yields are due more to the mechanical condition of the soil than to lack of fertility, particularly on clay lands. The poorest yields in this vicinity were invariably on second crops, after backsetting, while some of the best results were on land that was in constant cultivation for over fifteen years without recourse to a grass rotation. Assuming, then, that the poor yield is due to other causes than exhausted fertility, what is the remedy? A study of last year's crops indicates that the best results were on summer-fallows that were plowed early, made compact by frequent surface cultivation, and further, that previous treatment of the soil affected had more to do with the poor results than the time that had elapsed since it was in the virgin state. But some one may say, "What would be the result of that system in a wet spring?" The general opinion is that excessive cultivation produces too much straw. True, if the character of the cultivation is to leave the soil loose, too much fertility and too loose soil has a tendency to produce straw rather than grain, and that tendency is enhanced by abundant moisture; compact soil corrects that tendency. Look at grain growing along a path or road running through a field, straw always short and strong, with good head and plump grain, hence the deduction. The best system is that which compacts the land, with two or three inches of loose soil on surface to retain the moisture. Give the young plants a vigorous start, check the tendency to too much growth of straw, and insure early maturity. But the question arises, though the poor yields are not due to exhausted fertility, and can be remedied by restoring the soil to proper mechanical conditions by a correct system of cultivation, can that process be carried on successfully and indefinitely? Can any system of cultivation be devised that will not ultimately exhaust the soil of its fertility without means being adopted to restore to the soil some of the ingredients that growing crops take out of it? If not, when is the proper time to begin a system of agriculture that will not deteriorate the soil? The experience of Ontario and many of the wheat-producing States go to show that it is a fatal mistake to continue growing wheat until the land ceases to produce a profitable crop and then make vain efforts to restore its exhausted fertility. The more rational way would seem to be to adopt the best possible means to retain the fertility as near its original condition as possible. This, to men with one or more sections of land under cultivation, is a problem that is not easily solved.

Elton Municipality, Man. R. MCKENZIE.

A GRASS ROTATION.

As farmers we do not study our business as carefully as we should in order to bring the greatest possible results for labor and capital expended. It is scarcely so much added knowledge that we require as the more thoughtful and energetic application of the knowledge we already possess.

The question of how to keep up the fertility of the soil is becoming one of the utmost importance. More especially is this true of the older districts. The system of continually drawing from the soil and adding nothing in return has already been carried too far. While our Western prairie lands are exceedingly fertile, they are not inexhaustible, and the sooner we recognize this fact the better.

In the early years my method of handling the manure was to haul it each day during the winter season some distance from the stable, putting it in a snug pile, with the view of spreading on the land as soon as all weed seeds had been destroyed by heating. I have abandoned that practice for several reasons: the heap stays frozen too long in the spring to be able to get the manure plowed in for spring work, the value of the manure is greatly reduced by the heating process, and I found it very difficult to get time to handle such a quantity of

manure during the summer months. Our present method is to haul the manure direct from the stables, spreading it on the land intended for barley, allowing it to stand until about the first week of June, by which time most of the weed seeds have germinated; then plow under and put in the seed as rapidly as possible. We usually haul about one hundred loads of grain to the barnyard each harvest; this is threshed and the straw stacked in the yard, all of which is consumed by the cattle, which run about straw piles on fine days, or used for bedding before the new crop comes in. We find the cleaning up of the yard, usually amounting to two or three hundred loads of excellent manure, quite as large a task as we can overtake during the summer months. This is generally spread on summer-fallow. After having utilized all the manure manufactured on the farm each year, we find that it goes but a short distance, and some other method will have to be adopted to aid in keeping up the fertility. This will be found in a proper system of crop rotation, with cultivated grasses for hay and pasture as a basis.

A good rotation is two crops of wheat, followed by one of oats and one of barley, seeding to grass with the barley, allowing the grass to remain for hay and pasture for three years. This will form a rotation which will keep root fiber in the soil sufficient to prevent soil drifting, and with the manure applied from the stables should keep the soil in good condition.

We can scarcely overestimate the advantage of keeping our cattle on our own land, turning the growth into manure and distributing both solids and liquids evenly over the land.

My experience in breaking up timothy sod has been that it has given quite as good results, both in yield and grade of wheat, as on the native sod. Brome grass, native rye grass and timothy are the three leading grasses at the present time, none of these completely filling the bill. Brome grass is decidedly the favorite at the Brandon and Indian Head Experimental Farms, especially as a pasture grass. I have been fairly successful with timothy for a hay crop, especially in the earlier days, when the rainfall was more abundant. I believe native rye grass is equal, if not superior, to Brome grass. I have grown the two side by side the last two years, the rye grass giving considerably the best yield. Rye grass is harder to cut than Brome, but much more easily cured in bad weather. The objections I have to Brome grass are the expense and difficulty in getting good reliable seed and the necessity of sowing it without a nurse crop in order to secure a good catch, or, in other words, it takes five seasons and two summer-fallowings to get it and get rid of it again. Brome makes an excellent pasture grass, probably the best we have for the purpose, although rye grass is decidedly better for pasture than timothy. The immense growth of root fiber with Brome, when decayed, should add greatly to the fertility of the soil.

The aim of every farmer should be to get his farm fenced into large fields as soon as his circumstances permit; if possible, with a lane running through the center of the farm, all the fields opening into this lane. If the water supply can be located here, so much the better.

Dufferin Municipality, Man. A. GRAHAM.

Potatoes.

Perhaps of all vegetables, the potato possesses the greatest amount of interest to the Manitoba farmer. Besides furnishing an almost indispensable adjunct to the daily meal, it is valuable food for hogs, and horses are very partial to them, and many equine authorities consider them very beneficial to the latter. When the fact is taken into consideration that in Manitoba the crop is generally a good one, the cultivation of a few acres of these valuable tubers seems to be almost a necessity, a fact, I think, very generally recognized.

One of the greatest inducements for the extensive cultivation of the potato in this Province is the remarkable uniformity of its product and its freedom from disease and insect pests. I have not heard of a single case of "rot," and while "scab" is sometimes noticeable, when grown on very rich land, it is usually of a trifling nature, and if precautions are taken to immerse the seed in a solution of sulphate of copper (bluestone) this may be reduced to a minimum. The potato bug that causes so much mischief in other districts, although occasionally making its way here, does not seem to materially affect the crop, and is not looked upon with any great dread, as evidently our seasons are too short or our winters too severe to be favorable to its propagation to any injurious degree.

Many opinions are prevalent concerning the size of cut to plant in, order to produce the best results, and for some years we have conducted experiments on the Experimental Farm in order to arrive at as near a solution of this problem as possible. Necessarily, the variation of the climatic influences produce varying results, and to draw satisfactory conclusions, a test extending over a series of years is absolutely imperative. For instance, a certain set planted in a dry season will give results utterly at variance with the same set planted in a wet season. From a test comprising a number of years, and under various climatic conditions, enough information should be obtained to point out the best average set for both wet and dry seasons. The test commenced here in the spring of 1897, and al-

most every conceivable set was used, including from "one eye" to a "whole potato," "seed-ends," "potatoes with seed-ends attached" and "with seed-ends detached," etc. During a wet season the "single eye" has given very large returns, but the same set when planting was followed by a prolonged dry period would eventually succumb to dry rot. "Whole potatoes" usually give a very poor crop consisting of a number of small tubers, the few large sized ones being generally very irregular and malformed. "Seed-ends" were much more satisfactory than was anticipated, and some fair returns have been recorded from this set. The usual impression that seed-ends produce a very irregular product has not been confirmed by our test, but up to the present all the results point in favor of sets consisting of two or three eyes. This is apparently large enough to withstand severe drought, and the results have been invariably satisfactory as regards yield and uniformity.

A few words as to the manner of planting usually adopted on the Experimental Farm: The plow, of course, is always used in planting this crop. A piece of well-manured land is selected and the seeds planted in every third furrow, about four or five inches deep. As soon as planting is completed, the ground is thoroughly harrowed and rolled, and at first appearance of the tops a second harrowing is given and this destroys the majority of the weeds which by this time have germinated, besides tending to conserve the moisture. A horse cultivator is used at intervals throughout the summer, and sufficient soil is thrown up by this means to obviate the necessity of "hilling up," although this can readily be accomplished, if desired, either by the use of a breaking plow or with a special mouldboard attachment to the cultivator.

The question, "Which is the best variety of potato to grow?" is one very frequently asked, and a great many opinions are current on this point. There seems to be no doubt that the reason for these varied opinions lies in the diversified character of the soil in different localities. The variety that is looked upon as *par excellence* in one district, might be quite unsatisfactory in another, and this makes it very difficult to lay down any hard and fast rules for the selection of varieties, but the following list may be used in any part of Manitoba for table purposes:

EARLY VARIETIES.

Early Ohio.—A medium sized potato of good quality, round, with shallow eyes, and a very light rose color, not a heavy yielder.

Burpee's Extra Early.—Medium size, good flavor, oval shaped, a light pink color, and a fair yielder.

MAIN-CROP VARIETIES.

Pearce's Prizerinner.—A white, oval shaped potato of fine quality, and good yielder.

Early Rose.—This is too well known to need description, and is certainly a standard variety.

Everett.—A long potato, of a deep pink color, rather deep in the eye, but of good quality, and a heavy yielder.

Vanier.—A long potato, of a deep pink color, excellent form, being almost eyeless, and a good cropper.

Beauty of Hebron.—A long potato, of a light pink color, with shallow eyes, a good yielder.

The above are culled from a test covering over 100 varieties, and are selected with the end in view of combining early maturity with a profitable yield.

Where the desideratum is an exceptional heavy yield for feeding purposes, and where ripeness is not taken into consideration, I would suggest any of the following: "Irish Daisy," "Maule's Thoroughbred," "Carman No. 1," and "Delaware," but these are not to be recommended for culinary purposes in Manitoba.

HARRY BROWN.

For Provincial Hail Insurance.

BOISSEVAIN.

The question of Provincial Hail Insurance is again being agitated in several districts, owing to the failure of some of the local hail insurance companies to pay their losses in full. At Boissevain a committee, consisting of Messrs. A. S. Barton, Alex Campbell and J. W. Taylor, was appointed by the Agricultural Society to prepare a petition for presentation to the Local Legislature, embodying the arguments urged in favor of a provincial system of hail insurance in a paper read before the meeting by A. S. Barton.

NEEPAWA.

At a largely-attended meeting of the Beautiful Plains Agricultural Society, recently held in Neepawa, a lengthy discussion took place on the advisability of providing some system of provincial hail insurance. After a free discussion, the following resolution was passed, copies of it are to be sent to the clerks of municipalities and the secretaries of agricultural societies:

"That whereas it is a recognized fact that severe losses occur annually to the agriculturists throughout this Province by hail storms, causing great hardship to those directly affected, and financial loss indirectly to nearly all classes; and whereas the existing mutual and company hail insurance has proved too expensive and quite inadequate to meet the case; and whereas we believe that an equitable system of provincial hail insurance

based on an assessment either on all taxable lands in the Province or on all the agricultural lands, or on the cultivated lands only, or a combination of these principles, would best tend to alleviate the hardship, would lend stability to the farming and dairying interests and to the value of lands, and would promote immigration: therefore this meeting of the Beautiful Plains Agricultural Society, representatives of the whole electoral division of Beautiful Plains being present, without undertaking to outline a plan further than as above suggested, hereby strongly urges on the Provincial Government that they take such action as will bring the subject properly before the Legislature at its first session, and secure legislation establishing Provincial Hail Insurance, controlled by the Government."

Poultry and Pet Stock Winter Show.

The Manitoba Poultry Association held its eighth annual exhibition in Brandon, from January 29th to February 1st, inclusive, and a grand lot of fowl, representing many different breeds, were on exhibition from different parts of the Province. It is doubtful if ever there was such an extensive exhibit of high-average-quality birds in the Province before. There may have been a larger showing in some breeds, but never were so many breeds represented, nor were there ever birds shown all through in better fit. The poultry industry is a very important one, and it is encouraging to see so many taking such a deep interest in the breeding of high-quality fowl. The Winnipeg, Portage la Prairie, Burnside, Cypress River, Boissevain, Virden and Brandon districts were well represented, and all exhibitors took a keen interest in the scoring of the birds by Judge D. T. Heimlick, of Illinois, who had no easy task, as competition in many instances was very close, the winners leading only by a small fraction of a point in the scores.

Plymouth Rocks.—In the breeding pens of Barred Rocks, there were seven pens in competition, T. H. Chambers, Brandon, securing 1st and 2nd prize, with aggregate scores of 182½ and 180.5.6, and William Rutherford, Winnipeg, coming 3rd, with a score of 180.7.12. In cocks, Chambers was again successful and was awarded 1st and 2nd on birds scoring 90½ and 90½, A. J. Carter receiving 3rd on a cock scoring 89 points. In cockerels, H. A. Chadwick, St. James, with a score of 92½, was awarded 1st on a strong, vigorous, well-marked cockerel, 2nd going to G. H. Grundy, Virden, who also showed a good one. In hens, John Kitson, McDonald, came 1st, with 92½ points; Chambers 2nd, 91½; and Rutherford 3rd, 91. In pullets, H. A. Chadwick led, with 92½.

In *White Rocks*, James White, Rapid City, was awarded first place on breeding pen with a useful lot of birds, scoring 186½. J. R. Henry, Chater, also showed two fine pens, and came in for 2nd and 3rd prizes. In cocks, Peter Kahler, Rapid City, won with a score of 94½; Henry, 2nd, with a 83-score bird. In cockerels, Peter Kahler and Joseph Wilding, Norwood Bridge, Winnipeg, had entries hard to beat, the former winning first with a score of 94, Wilding's bird being only one-quarter of a point behind.

Light Brahmas were not out in large numbers, but very good birds were shown. J. W. Higginbotham, Virden, who always displays his birds in good fit, was out with some very fine specimens. An exceedingly attractive pullet of his own raising, scoring 95 points, was awarded 1st in her class. He also won 1st on cockerel (94½) and 1st and 2nd on breeding pens, scoring 184½ and 183½, respectively. Newall Bros., Winnipeg, won 1st on cock, with 93½ points, a good bird, but cut sharply on comb. First and 2nd on hen, with a score of 93½ and 92½, also were awarded to birds shown by them.

Partridge Cochins were a good exhibit, especially single birds. A. E. Shether, Brandon, won 1st on cock, scoring 93½, and 1st on cockerel, 91½. W. Anderson, Brandon, won 1st on hen, scoring 94½, and on pullet, and 1st on breeding pen. W. Anderson was also the chief exhibitor in *White Cochins*, on which he took a number of prizes.

White Wyandottes.—This class was one of the largest on exhibition. John Kitson, McDonald, won 1st place with his breeding pen, scoring 188½; 2nd going to Joseph Wilding, 185½. John Knowlton, Brandon, was a large winner on single birds, winning 1st on cock, 93; 1st on cockerel, 92½; and also was successful with hens and pullets.

Golden Laced Wyandottes were exhibited by Thomas Reid, C. H. Wise, of Winnipeg, and Peter Kahler. Reid won 1st on breeding pen, scoring 184½; 2nd going to Wise. Kahler won 1st with a handsome cockerel that scored 93½, and was a large winner in single birds.

Silver Laced Wyandottes were shown by Ed. Brown, Boissevain, and Carter, Brandon: Brown winning most of the prizes.

Buff Wyandottes and *Buff Plymouth Rocks* were exhibited by H. W. Balls, Portage la Prairie, and Capt. F. J. Clark had a fine lot of *Buff Cochins*. A nice display of S. C. Brown Leghorns was made by T. H. Chambers, Brandon.

Houdans were exhibited by C. H. Wise, who won 1st on breeding pen, with a score of 189½. Charles Midwinter, Winnipeg, won 1st on cock, 94; and 2nd on breeding pen and 1st on hen, and W. Anderson won 1st on cockerel and 2nd on hen. Joseph Wilding won 1st on pullet.

Single Comb White Leghorns were largely exhibited by George Wood, Winnipeg, who, besides

winning on breeding pen, was a large winner with single birds. S. C. Briggs, Brandon, also exhibited, and was a winner in this class.

Rose Comb White Leghorns were represented by fowls from the yards of George Woods and Walker Bros., the former getting the lion's share of the prizes.

Rose Comb Brown Leghorns.—The breeding pen prize was won by Charles Midwinter, with a score of 183, who won 1st also on pullet, 92. J. T. Hutchinson, Hayfield, was awarded 1st and 2nd on hen, 92, and 1st on cock, 92.

E. Fortier, of Winnipeg, showed a number of Silver Spangled Hamburgs.

Games.—James A. Mullen, Cypress River, won the majority of the prizes, exhibiting Games of different varieties and chiefly his own breeding. He showed 15 birds, which averaged a score of about 91 points, which was possibly as high a record as was ever obtained by a single exhibitor in the Province. John Porteous, Brandon, was also an exhibitor in this class.

Black Breasted Cornish Indian Games were shown by Frank E. Milne and Walker Bros., Brandon.

Black Minorcas.—1st prize on breeding pen went to Thomas Reid, with a score of 187 1/2, and 2nd to W. Anderson, with a score of 182.

Some excellent geese, Toulouse and China, were shown by Charles Midwinter. Toulouse geese were also shown by Frank Hutchinson, Hayfield. G. H. Grundy, Virden, was a large exhibitor of ducks.

Bronze Turkeys, almost an exhibition in themselves, were shown by William Kitson, Burnside; Charles Midwinter, Joseph Wilding, and J. T. & Frank Hutchinson.

Pheasants, pigeons, rabbits and Belgian hares were an attractive feature, and were of special interest to the boys.

The members of the Brandon Association, Mr. Buskin, President, and D. Sheriff, Secretary, deserve credit for their good work towards the success of the exhibition.

ANNUAL MEETING.

On Thursday evening, January 31st, the Association held its annual meeting, in the Brandon City Council Chamber, which was largely attended. Several matters were discussed, among them being the failure of the Secretary and Treasurer to furnish an audited report of the financial affairs of the Association for the past two years. No agricultural society so entirely remiss in its financial affairs could hope to receive an annual grant from the Provincial Treasury. How this Association has managed to escape in this particular was a mystery that many of the members were astonished at. The Treasurer was instructed to furnish a duly audited report of the Association's finances without further delay. The following officers, for the current year, were elected: Hon. President, Premier Roblin; President, A. B. Stovel; Vice-Presidents, J. W. Higginbotham, Virden, and John Kitson, McDonald; Secretary, C. H. Wise; Treasurer, William Rutherford. Directors—George Wood, Charles Midwinter, Thomas Reid, Winnipeg; H. A. Chadwick, St. James; J. P. Brisbin, Brandon; and F. T. Hutchinson, Hayfield.

Weighed and Found Wanting.

We need not repeat nor enlarge upon the facts cited in the last issue of the FARMER'S ADVOCATE showing the unreliability of the tuberculin test, and its injurious effects, particularly on breeding animals. The actual damage wrought to breeding interests has already been sufficient not only to destroy confidence in but to arouse widespread distrust of tuberculin injections. No amount of bolstering testimonials from manufacturers that the tuberculous matter with its living germs from which the fluid is prepared has been "boiled," "sterilized" and "strained" till quite innocuous, or assurances that the test is a "good thing for the country" from parties who have their own reasons for desiring to see it perpetuated, can establish it in public favor. But there are other aspects of the case which deserve serious consideration, and to these we purpose devoting some attention for the benefit of the agricultural public. But before doing so, we must mention, in passing, one absurdity involved in the present system as it affects international relations. The limited number of pure-bred cattle going to the States must be tested, some of them a second time, after having already undergone the ordeal in Britain; and yet during the year 1900, Canada sent into the States 85,989 head of cattle, mostly grades and scrubs, without any test whatever, to be fattened, grazed or bred on farms—just as the purchasers felt disposed! Could anything more farcical be conceived?

We have been at some pains to study the records of the nature and history of the so-called test, and the results of its unfortunate application, which has been quite as futile in eliminating bovine tuberculosis as was the original attempt of a few enthusiasts to cure human consumption with the Koch lymph. Both were no doubt primarily well-meant but misdirected efforts. One cannot but ask who in the first place designed or sought the imposition of this test? Was it the farmer, the dairyman, or the breeder, any of whom have greater personal interest in seeing healthy stock than can anyone else. Surely we do not see an unhealthy animal or hear of one dying, and probably least of all from any disease, and being tuberculous. What says the Chief Inspector in the annual report

of the Dominion Minister of Agriculture, just issued:

"I have much pleasure in calling your attention to the excellent health and condition of all classes of live stock throughout the entire Dominion." During the year ending October 31st, 1900, there were officially tested in Canada 17,785 cattle—mostly suspected herds—and of these only 358 showed a rise in temperature, supposed to indicate tubercles somewhere in the system; but that they are hurtful or transmissible is not asserted. The human consumption which ravages Canada, therefore, does not arise from the cattle! Undoubtedly the same is true of Great Britain and the United States. The public did not ask for this test, and the facts just cited demonstrate that they displayed good common sense in not doing so, even without waiting for bacteriologists to record the differences noted between the bacilli of bovine tuberculosis and consumption, or in the absence of proof that the disease is conveyed from animals to man.

But we propose to go further than this, and to put into the box on this subject an expert who, probably of all men living, joins in the highest degree the practitioner and the pathologist, William Osler, Professor of Medicine in the great Johns Hopkins University, and Physician to the Johns Hopkins Hospital of Baltimore, a graduate of Toronto University. We quote from his masterly article on "Nineteenth Century Progress in Scientific Medicine," in which, under the heading, "Tuberculosis," he says:

"The following points with reference to it may be stated. In a few very rare instances the disease is transmitted from parent to child. In a large proportion of all cases the disease is 'caught.' The germs are widely distributed through the sputum, which, when dry, becomes dust and is blown about in all directions. Tubercle bacilli have been found in the dust of streets, houses, hospital wards, and much-frequented places. A single individual may discharge from the lungs countless myriads of germs in the 24 hours. Dr. Nuttall estimated from a patient in the Johns Hopkins Hospital, who had only moderately advanced consumption, that from one and one-half to four and one-third billions of germs were thrown off in the 24 hours. The consumptive, as has been well stated, is almost harmless, and only becomes harmful through bad habits. The germs are contained in the sputum, which when dry is widely scattered in the form of dust and constitutes the great medium for the transmission of the disease. If expectorated into a handkerchief, the sputum dries quickly, particularly if it is put into the pocket or under the pillow. The beard or moustache of a consumptive is smeared with the germs. Even in the most careful, the hands are apt to be soiled with the germs, and in those who are dirty and careless, the furniture and materials which they handle readily become infected. Where the dirty habit prevails of spitting on the floor, a room or the entire house may contain numbers of germs. In the majority of all cases the infection in tuberculosis is by inhalation. This is shown by the frequency with which the disease is met with in the lungs, and the greater prevalence of tuberculosis in institutions in which the residents are restricted in the manner of fresh air and a free, open life. The disease prevails especially in cloisters, in jails and in asylums. Infection through milk is also possible; it is doubtful whether the disease is transmitted through meat. So widespread are the germs that post-mortem examination has shown that a very large number of persons show slight signs of the disease who have never during life presented any symptoms; in fact, some recent investigations would indicate that a very large proportion of all persons at the age of 30 have somewhere in their bodies slight tuberculous lesions. This shows the importance of the individual predisposition, upon which the older writers laid so much stress, and the importance of maintaining the nutrition at its maximum.

"One of the most remarkable features of modern protective medicine is the widespread interest that has been aroused in the crusade against tuberculosis. What has already been accomplished warrants the belief that the hopes of even the most enthusiastic may be realized. A positive decline in the prevalence of the disease has been shown in many of the larger cities during the past ten years. In Massachusetts, which has been a hotbed of tuberculosis for many years, the death rate has fallen from 42 per 10,000 inhabitants in 1853 to 21.8 per 10,000 inhabitants in 1895. In the City of Glasgow, in which the records have been carefully kept, there has been an extraordinary fall in the death rate from tuberculosis, and the recent statistics of New York City show, too, a similar remarkable diminution.

"In fighting the disease our chief weapons are: First, education of the public, particularly of the poorer classes, who do not fully appreciate the chief danger in the disease. Secondly, the compulsory notification and registration of all cases of tuberculosis. The importance of this relates chiefly to the very poor and improvident, from whom, after all, comes the greatest danger, and who should be under constant surveillance, in order that these dangers may be reduced to a minimum. Thirdly, the foundation in suitable localities, by the city and by the State, of sanatoria for the treatment of early cases of the disease. Fourthly, provision for the chronic, incurable cases in special hospitals.

This conclusive testimony from Prof. Osler shows that the danger to man from animals is practically nil, a mere possibility, and that the real safeguards are education as to the nature of

the disease, compulsory notification of cases of consumption, sanatoria for treating early cases and special hospitals for chronic cases. His information that a large proportion of adults have somewhere in their systems slight tuberculous lesions (which, we presume, under injections would occasion a rise in temperature) is not made the basis of any absurd suggestion that human beings should be subjected to the test, against which humanity would revolt. Nor is there any better reason for the attempt to force it upon cattle owners.

The general lesson which the cattleman may gather from the foregoing statement by Prof. Osler is to discard or exclude from his herd any animal that may be in a visibly diseased condition, and by ample nutrition, pure food, air and water, sunlight and exercise, so build up the systems of the members of the herd, of whatever breed or type it may be, that they will be enabled to withstand the development or invasions of ill-health until their natural course of usefulness is run. In the face of scientific testimony like that of Prof. Osler, the utter folly and futility of the tuberculin-test crusade stands out in vivid perspective. In its original conception the elimination of animals with tubercles in their bodies may have been supposed possible. That would seem to have been the ultimate design. A recent elaborate treatise from a U. S. experiment-station professor discloses what has been in the mind of some parties, viz., the gradual enforcement of a system whereby tuberculin-testing by veterinarians would be enforced on every farm, and the carcasses of slaughtered animals be passed upon by bacteriological inspectors. How do the farmers of Canada or the United States relish such a prospect? The thin end of the wedge has been introduced, but we cannot think, in the light of what is now known, that any serious attempt will be made to drive it home, and by so doing completely paralyze the right arm of agriculture. We trust and believe that wiser counsels will prevail, and that the present useless and vexatious regulations will be withdrawn. The farmers of this country can readily see that its injurious effects would soon fall heavily, directly or indirectly, upon them, and that our now reviving cattle-feeding industry would receive a setback from which it would be extremely difficult to recover. The Canadian Parliament is now in session at Ottawa, and it is there to crystallize in law and regulation the will of the people. We would therefore counsel farmers in all parts of the country to at once write their parliamentary representatives at the capital, urging upon them the immediate necessity of cancelling the tuberculin-test regulations.

Farmers' Institute Meetings.

The series of Institute meetings recently held throughout the Province has been one of the most successful ever held. The speakers everywhere report good attendance and live interest in the subjects under discussion. The amalgamation of Institutes with the agricultural societies seems to have given a new impetus to the work, and certainly the interest awakened in the discussions of practical subjects relating to the different phases of farm work is most encouraging.

AT CLANDEBOYE.

A good live Institute meeting is reported as being held at Clandeboye, under the auspices of the Selkirk Agricultural Society, and Secretary Roberts spoke on the objects and aims of Institute work, and also made reference to the growing of spelt, which he claimed was a heavy yielder, making good stock food, and the straw was excellent fodder. A sample grown by Mr. Nelson was exhibited. Harold Newton read a paper on "Brome Grass," and exhibited a fine sample grown by himself. F. W. Barber addressed the meeting on the "Care of Stock." Each paper brought out good discussion.

AT CARMAN.

A meeting for Farmers' Institute work, under the auspices of the Dufferin Agricultural Society, was well attended. Messrs. S. A. Bedford and J. J. Rooney were the speakers, and much valuable information was given by them. Mr. Rooney spoke on "The Selection of Seed Grain," emphasizing the importance of exercising great care in the selection of seed grain. Mr. Bedford spoke on "Cultivated Grasses," recommending native rye grass and Brome grass for hay and pasture.

Testimonials.

W. SAUNDERSON, Souris, January 26th, 1901:—"Your Christmas number was a magnificent production of art and useful knowledge, and I may add that I think the farmer who does not take the ADVOCATE is not keeping abreast with the times."

JOHN ELSON, Mariapolis, Man., January 21th, 1901:—"I am very much pleased with your Christmas number of the ADVOCATE. It is a beauty, and ought to be in every farmer's house. The ADVOCATE is better every year."

RODERICK MCKENZIE, Brandon, Man., February 1st, 1901:—"If not too late, I would like to congratulate you on the excellence of your Christmas number. So much instruction and well-written matter, together with lifelike illustrations of live stock, cannot help but be a potent molding influence on farm life."

Our Scottish Letter.

The wisdom of sundry old saws is being sadly discounted these days. We have been told that "a green Yule" makes "a fat kirkyard," but in spite of having one of the greenest "Yules" on record, the sexton has not been kept unusually busy. Some wiseacres have been telling us that "the green Yule" is only half the proverb, and it may be that they are right. The other half has something about "Pasche," or Easter; but what it is we do not know. Apart from wise saws of this kind, the season has been a favorable one for farmers. The lengthened period of open weather has enabled them to keep stock outside much beyond the usual time, and this has saved the fodder. The absence of frost is not a good thing, however, and unless hard weather comes soon, spring work may be greatly retarded, and the grub will be busy amongst the corn. There has not yet been a single day's skating in Scotland, and the men of the "roarin' game" have had no temptation to neglect their work.

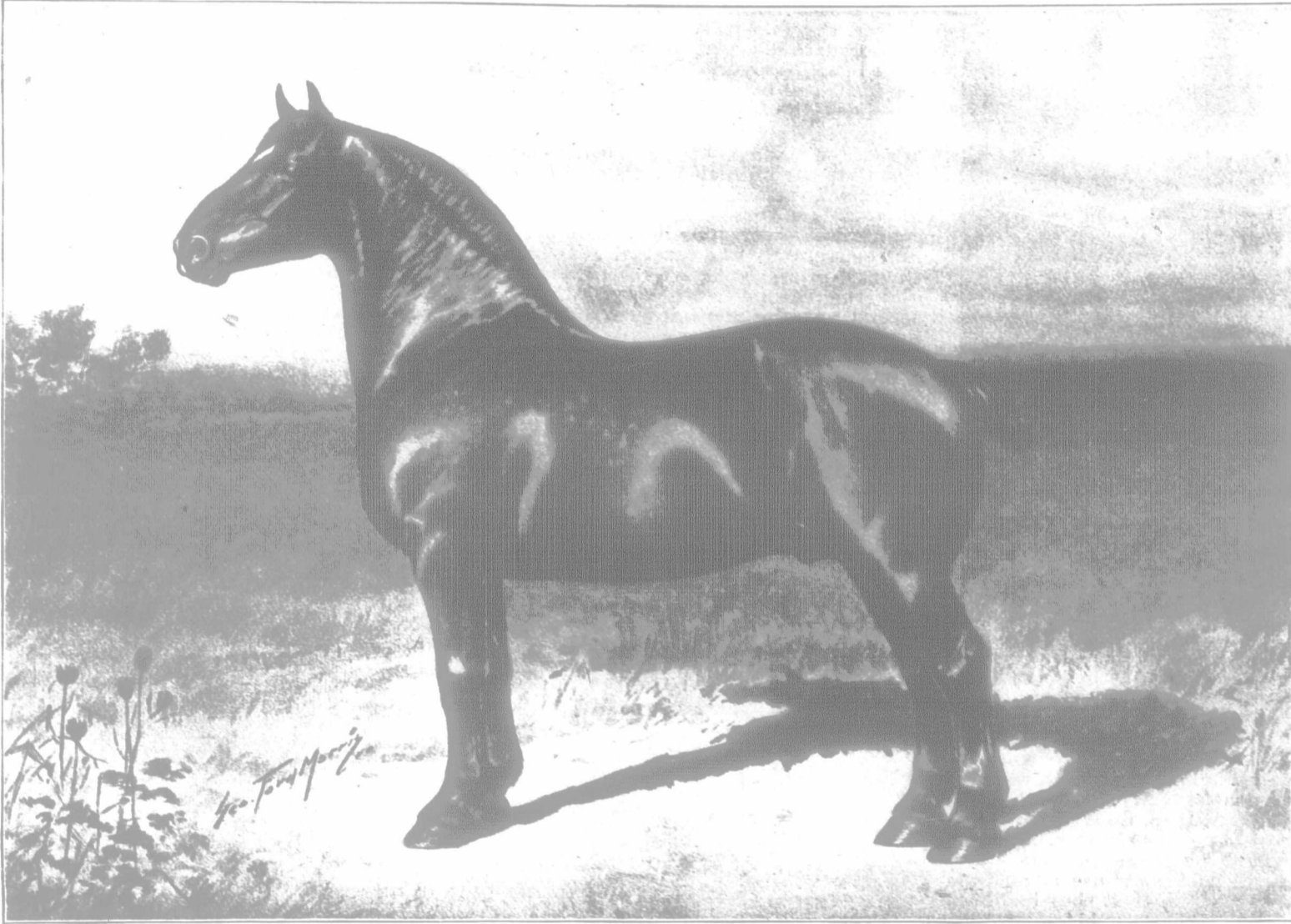
Interest at this season centers around such things as meetings of Farmers' Clubs and discussions on different themes connected with agriculture. The various teaching colleges also issue their reports about this time, and so seek to justify their existence as factors in agricultural improvement. Two subjects are dealt with this year in

and English wheat in the Lothians; but the rule does not hold with potatoes. The general impression is that potato seed off poor moss land does best in the fine red soils, where the best potatoes are grown. The Professor's explanation of this phenomenon was that the potato plant, if grown continuously on rich soil, became like the Epicurean—swollen, gross, and unhealthy. It was good for the Epicurean to be put for a season on short commons, to feed on plain fare and drink nothing but water. So, also, it is good for the potato to be subjected to a regime in which hardiness rather than luxury is its lot, and this is the reason why good results follow from the use of potato seed grown on high mossy land. It is a condition in this mode of treatment that the subject at first dealt with be a sound one, that the seed be healthy and capable of sustaining the rigors of the situation in which for a time it finds its habitat. Professor Wright's theory is plausible, and whatever the explanation, the fact is undoubted that the best potato seed is grown on poor mossy land. Such seed invariably produces healthy crops when grown on land of a different character.

Great discussions are taking place on the best kinds of oats. The West of Scotland College has conducted an elaborate series of experiments extending over several years, with the object of determining what kinds are most profitable alike in respect of grain and straw, and some years ago similar experiments were conducted in Aberdeen

How the Smithfield Show Sheep "Died."

As a rule, sheep in wool do not give such a high proportion of carcass to live weight as cattle, but an exception must usually be made in this respect in the case of animals fed for the fat-stock shows. Of this we have a striking reminder in some details published by the *Live Stock Journal* regarding the carcass weights of a number of the exhibits which figured at the recent Smithfield Show. Some of the sheep there shown are represented as having dressed up to very close on 70 per cent. of carcass to live weight, the best performance in this respect standing to the credit of a pen of Southdown wethers shown by H. R. H. the Prince of Wales. These averaged 179 pounds live weight, and their carcass dressed 125 pounds apiece, so that their proportion of carcass to live weight worked out to 69.83 per cent. Next came a pen of Lincoln wethers, whose live weight was 377 pounds and carcass weight 256 pounds, a proportion of 67.90 per cent. of carcass to live weight. The general run of the others dressed from 62 to 66 per cent., though some fell to as low as 56. In the case of the lambs, the average percentages ranged from 55 to 60, though in one case a carcass dressing 64.78 per cent. of the live weight was shown. These were a pen of Shropshire lambs shown by Mr. P. L. Mills and awarded third prize in their class. Another pen of Southdown lambs dressed 63.33 per cent., but as a general rule the proportions of carcass to live weight in the case of



IMPORTED PERCHERON STALLION CASTELAR, 25043 (42638).

Winner first prize, World's Exposition, Paris, 1900. Winner first prize in class, and Championship, all ages. International Live Stock Exposition, Chicago, 1900. Property of Dunham, Fletcher & Coleman, Wayne, Du Page County, Illinois.

some of these reports—the best varieties of oats and the most useful and profitable method of setting potatoes. It is a moot point whether whole small potatoes or cut large potatoes make the best seed, and the Cheshire County Council authorities have for some time been striving to solve the problem. The result is very much *nil*, the advantage or disadvantage turning not so much on the size of the seeds or whether they are cut or whole as on the kind of the seed. White-blossoming potatoes appear to do best planted whole, but taking a series of years into consideration, there does not seem to be much difference between the methods adopted. The main thing is to get good seed.

At a recent meeting in Glasgow, the question was discussed whether change of seed in respect of roots or cereals was desirable. It is the usual practice to change seed, but no one ever actually investigated the reason why. The discussion on the point arose in connection with a paper by Principal Wright, of the West of Scotland Agricultural College, on "Some Hints on Profitable Crop Cultivation." The Professor advocated frequent change of seed and the ready trial of new varieties. He also advocated, as a general rule, the growth of seed from a better to a worse soil. This is the rule generally followed with respect to cereals, Lothian oats being preferred in the West

shire by Mr. Jamieson, F. I. C., of the Agricultural Research Association. While in both cases a good deal of solid instruction has been gleaned, after all, the main thing is to know what purpose is to be served by the crop and what are the conditions of soil and climate under which it has to be grown. For grain alone, an oat called Newmarket comes well through the ordeal, and a good all-round oat is Longhoughton, grown first at a farm of that name in Northumberland, whence it has been transferred to East Lothian, and there it does remarkably well. The favorite oat on highlands in the West of Scotland is Tam Finlay, not a great oat for grain, but the straw is excellent, and nothing beats it for fodder. Generally, the rule brought out in all the trials is: Given a great yield of grain, you have medium quality of straw. Given good eating straw, you have late ripening and moderate yield of grain. The earliest oat in the trials was Garton's new Tartar King; the latest, the time-honored Tam Finlay; and the medium, the favorite all-round average Potato oat.

"SCOTLAND YET."

JOS. CAIRNS, Lambton Co., Ont.:—"I received the Bible premium all right, and was more than surprised to receive such a handsome volume for securing only two new subscribers. Accept my best thanks. Will try to get some more."

the lambs fell below 60 per cent. The reports of the judges regarding the quality of the carcasses are very interesting. We subjoin a few. Regarding a pen of Cotswold lambs, the butcher who slaughtered them states: "These sheep died very well for kidney suet, but their carcasses cut up very fat and were more wasteful than was anticipated." All the Lincolns are described as having been "excessively fat." Southdowns seem to have pleased the butchers well, though in a few instances they are described as "possessing too much fat" and consequently being "wasteful." Of the Hampshires, the reports were very satisfactory. One butcher describes the pen slaughtered by him as "giving good flesh to mutton and very little fat at the back more than ordinary half-bred sheep," while another described a pen of Hampshire lambs as "full of lean meat and first-rate quality and not a bit wasteful." Another breed that has been favorably reported on in this connection is the Suffolk, which is described as showing "a goodly proportion of lean to fat," and as having "cut up well upon the block." The Shrops, as a rule, gave more fat than butchers care for, but the Oxfords, as a rule, died well, and the reports regarding them show that they gave a good average percentage of lean to fat. Of the cross-breeds, too, the majority gave good mutton, though some pens are described as carrying more fat than butchers desire nowadays.

Report of the Block Test at the Ontario Provincial Winter Fair.

(Prepared by Prof. J. B Reynolds, O. A. C.)

One of the lessons to be learned from the block test in swine is that it is very important for the feeder to know when the animal is ready for market. It is much easier to leave the animal unfinished, or to feed a week or two too long, than it is to know just when the right condition is reached. A number of the carcasses slaughtered at the show were unfinished; and, at the packing house an unfinished carcass commands a lower price per pound, because the quality of the meat is poorer than it is

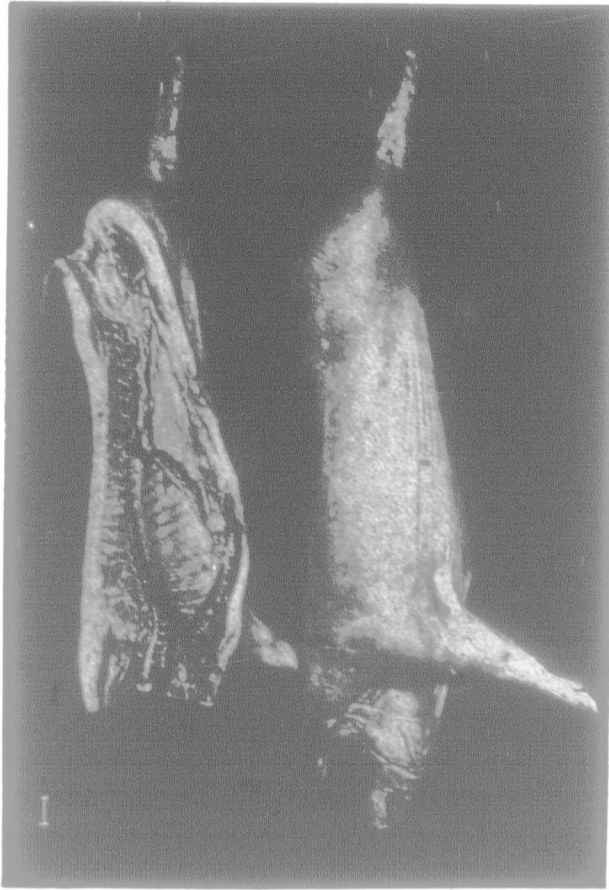


FIGURE I.—REPORT ON SWINE CARCASSES.

Wrong type for bacon hog. Note:
 1. The short side. A long side is desirable because this part between the shoulder and the ham furnishes the choicest cuts, and brings the best prices.
 2. The short, thick ham. The left side of the figure shows what this form of ham means—a tendency to too much fat.
 3. The arched crown, a sure sign of being predisposed to fat.
 4. The excessive thickness of fat over the back and round the ham.

in better finished animals. But there was more error on the side of feeding too long. After a certain stage is reached, according to the demands of the English market, the feed given is practically wasted, since it is turned to fat by the animal, and the superfluous fat serves only to lower the grading quality of the hog. There were two conspicuous illustrations of feeding too long. In reply to letters sent inquiring about the condition of the animals slaughtered, Mr. A. C. Hallman reports that his Tamworths, according to his opinion, had been kept a week too long, and were overripe. These animals were graded at the packing house as medium fleshy (too fat for best selection). If they had been slaughtered a week earlier, they would in all probability have graded No. 1. Mr. Blain reports that a pair of his grades were too fat and had been held back. One of this pair ranks fat and the other medium fleshy.

This year we were able to secure some uniformity in the fasting of the animals to be slaughtered; and, as a consequence, the results are more uniform and satisfactory. The accompanying tables relating to the per cent. of dressed weight show that this percentage does not vary uniformly with the quality of the carcasses. The fatter animals almost invariably dress a higher percentage than the leaner ones.

PERCENTAGE OF DRESSED WEIGHT, SWINE CARCASSES.

Breed	Average for class	Average for first-prize pair
Berkshire	76.5	77.8
Essex	80.5	79.5
Grade	80	78
Tamworth	77.5	77.5
Yorkshire	78.4	76.5
Average	78.3	77.9

In the sheep there is practically no difference, as the table shows, on the average between the first-prize carcasses and the average carcasses, but the following table showing the relation between the percentage of shrinkage and the prizes won indicates that in the yearling classes the percentage decreases with the quality of the mutton; but in the lamb classes, on the contrary, the percentage increases with the quality of the meat, as indicated by the prizes. All these results go to show that high percentage indicates a greater amount of fat; and since excessive fat is undesirable in the markets, it appears that to dress a high percentage is no longer an unalloyed virtue in either sheep or swine.

PERCENTAGE OF DRESSED WEIGHT, SHEEP CARCASSES.

Breed	1 year and under 2		Under 1 year	
	Average for class	First-prize carcass	Average for class	First-prize carcass
Cotswold	55	55	55	57
Dorset	62	64	57.5	58
Grade	63	62.5	57.5	58
Lincoln			56	53.5
Leicester			57.5	56
Oxford	60	61.5	57.5	57
Shropshire	62	60	56	59.5
Southdown	64.5	65	57.5	59.5
Suffolk	62.5	63		
Average	62	61.5	57	57

Showing relation between per cent. of shrinkage and prizes won:

Breed	Yearlings			Lambs		
	1st.	2nd.	3rd.	1st.	2nd.	3rd.
Shropshire	60	62	64	59.5	55	53
Southdown	65	64	62	59.5	57	56
Grade	62.5	63	65	58	57	55
Average	62.5	63	63.7	59	56.3	54.7

COMPARISON OF DECISIONS ON THE SAME ANIMALS ALIVE AND DRESSED.

There is a pretty fair agreement between the decisions of the judges in the live classes and those of the judges in the block test.

Among the swine classes, the pairs in the Yorkshire, Berkshire and Essex are given the same standing relatively in the live and dressed classes. In the Tamworths, however, there is a reversal of the decision, the first-prize pair in the block test winning no prize on foot; the second-prize pair winning third, and the third-prize pair second, in these two classes, respectively. In the grade classes, the first-prize pair in the block test was given fourth place in the ring. It might be mentioned that this same pair won the sweepstakes in the block test over all breeds.

Sheep classes: Here again the decisions harmonize fairly well. It is impossible in a number of cases to make any comparison on account of the fact that the animals were sometimes entered for the block test unnamed, and it was therefore impossible in these cases to identify them. Where comparisons were possible, there are in the yearling classes only two reversals. In the Shropshire, the first-prize block test received no place on foot, and the second received third and the third second. In the Southdowns, the first and second have their places reversed in the two classes. The same is true of the Lincoln lamb class.

The accompanying tables set forth the comparisons of these decisions, so far as comparisons are possible. Those who wish to study out the matter in detail may do so by referring to these tables.

Breed	Prize in block test			Prize in ring		
	1st.	2nd.	3rd.	1st.	2nd.	3rd.
Breed	Cotswold	1	2	3	2	3
	Dorset	1	2	3	2	3
	Essex	1	2	3	2	3
	Leicester	1	2	3	2	3
	Lincoln	1	2	3	2	3
	Oxford	1	2	3	2	3
	Shropshire	1	2	3	2	3
	Southdown	1	2	3	2	3
	Tamworth	1	2	3	2	3
	Yorkshire	1	2	3	2	3

The block test is undoubtedly a potent factor in harmonizing the judgments on classes before and after slaughtering. There is this year less discrepancy in this respect than last year. The appointment of the same judges for live and dressed classes, and requiring these judges to justify their decisions before the public in the lecture room, will certainly lead to a more careful and discriminating study of those indications in the live animal that point to the most desirable quality of meat in the carcass. There is a decided

demand for this harmony of judgment, and at the meetings held at the recent show scant consideration was given to "breeders' ideals" that interfered with the demands of the consumer.

Care of Draft Breeding Stock in Winter.

As to stallions, it is best to have a box stall, and yard for exercise (that is, if they are not exercised every day on the halter). From the first of February until the season commences they should be walked out about three or four miles every day. As to feeding in the winter, I think it best not to feed them over three quarts of good oats and the same quantity of bran, morning and night, and about eight or nine quarts of pulped turnips in the middle of the day. Some prefer carrots, but I have not much use for them only for horses that are working hard or milch cows. I feed hay three times a day. About a month before he commences the route I feed boiled oats about three times a week, and when he commences the season I boil a little wheat with the oats. Some will ask, what quantity of grain? Of that the groom will have to judge, as there is so much difference in horses. The feet will have to be well looked after through the winter—well pared down at the heels. The shoes should be taken off soon after the season and left off until near spring—about six weeks before commencing his route again.

I never use a brush or comb on a stallion through the winter, but when the season commences you cannot give him too much of it.

My draft brood mares are either working or get exercise every day through the winter. I think they would be better working if the work is not too heavy. Brood mares lose more foals the beginning of the winter than any other time of the year. The reason is, I think, that they are left out too late in the fall and not fed enough grain when the grass is frozen. I generally commence feeding a little oats and mix a little wheat in it as soon as the grass gets poor in the fall. I think there is nothing like a little wheat for mares that are in foal. I never had a mare cast a foal when I fed a little wheat with the oats, and I fed the wheat and oats up to the ninth or tenth month. I am speaking now of mares that are working every day, for I do all the work on the farm with my brood mares. I feed some straw, but I don't like it as well as timothy hay. I find that neither clover hay nor straw is good for brood mares, but may do all right on it if they get turnips. I would not feed carrots to mares that are in foal, as I think they act too much on the kidneys. The colts will come stronger if the mares are working most of the time or have plenty of exercise.

E. W. CHARLTON.

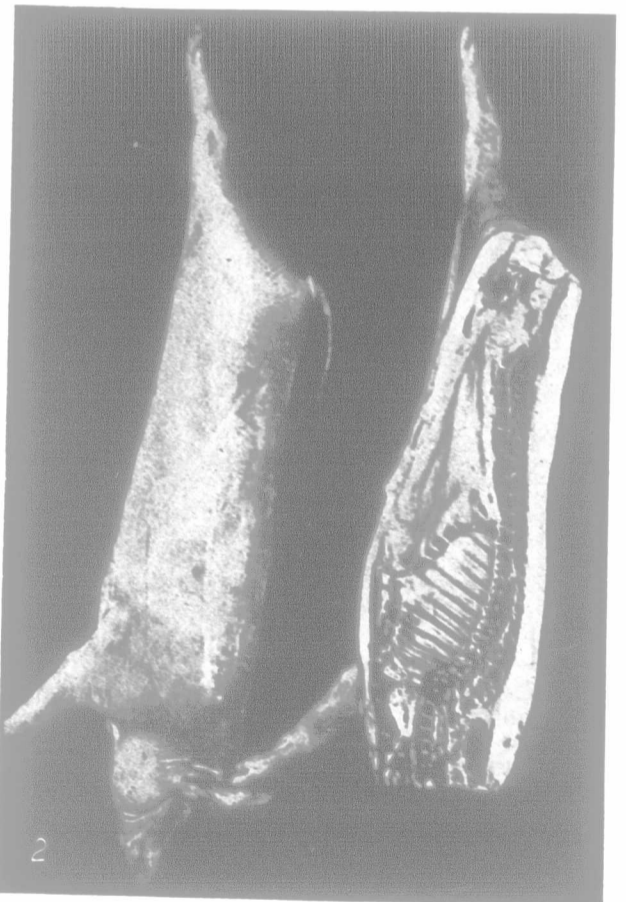


FIGURE II.—REPORT ON SWINE CARCASSES.

Correct form, but fed too long. Note as to form:
 1. The long, tapering ham and head, and light jaw.
 2. The long side, and even depth throughout from shoulder to ham.

If this animal had been killed some weeks earlier, it would have been worth more to the packer, and, under a proper system of graded prices, would have brought more to the producer. Note the excessive amount of fat carried.

J. W. CALIBECK, Augustine Cove, P. E. I.:
 The FARMER'S ADVOCATE is a very welcome visitor—one I would not care to dispense with. It always brings a fresh supply of news, both instructive and reliable. May the first year of the new century be a prosperous one to the ADVOCATE staff, and to those whose interests it advocates throughout this fair Canada of ours—the live-stock interests, of which it is a faithful friend and champion.

Carriage Horse Breeding.

To the Editor FARMER'S ADVOCATE:

SIR,—When attending the Canadian fairs last summer and fall, I was very frequently asked the question: "What is the best way to breed a good carriage horse, one with size, substance, good conformation, all-round action, combined with quality and a fair amount of speed, and a good temper?" Having had some experience along these lines and a somewhat intimate knowledge of all the coaching breeds, I would say that a very useful and very salable horse can be produced by a Hackney stallion and trotting-bred mare, more especially where speed is a consideration. The stallion should stand not less than 15 hands 3 inches high, with plenty of bone and substance, a clean head and neck well posed, good withers and deep, well-sloped shoulders and well-ribbed middle, a level top line, tail well set on and quarters round and full, supplemented by good legs and feet. He should be a good all-round actor, have some speed, and be thoroughly bred in Hackney lines. The mares should stand from 15 hands 3 inches to 16 hands 1 inch high, have good heads and necks (the more length of neck the better), be good roadsters and line gaited, and free from any tendency to spread or sprawl behind, that very serious defect in gait being very frequently found in trotting-bred horses, and always very objectionable in the carriage horse, and will considerably reduce the market value of an otherwise useful animal. My reasons for preferring a Hackney stallion to all others for producing heavy harness horses is mostly on account of his well-known ability to transmit all-round action, good carriage conformation, a rugged constitution, freedom from disease, either hereditary or acquired, and a happy faculty of keeping easy and maturing early. Horse-breeding along these lines will be found to give very satisfactory results, and if the produce on all occasions does not come up to the requirements of a high-class carriage horse, the owner will at least have the satisfaction of possessing a very useful general-purpose animal, and the waste material will be very slight. Excellent results will also be obtained in the production of heavy harness horses by the use of a good Hackney

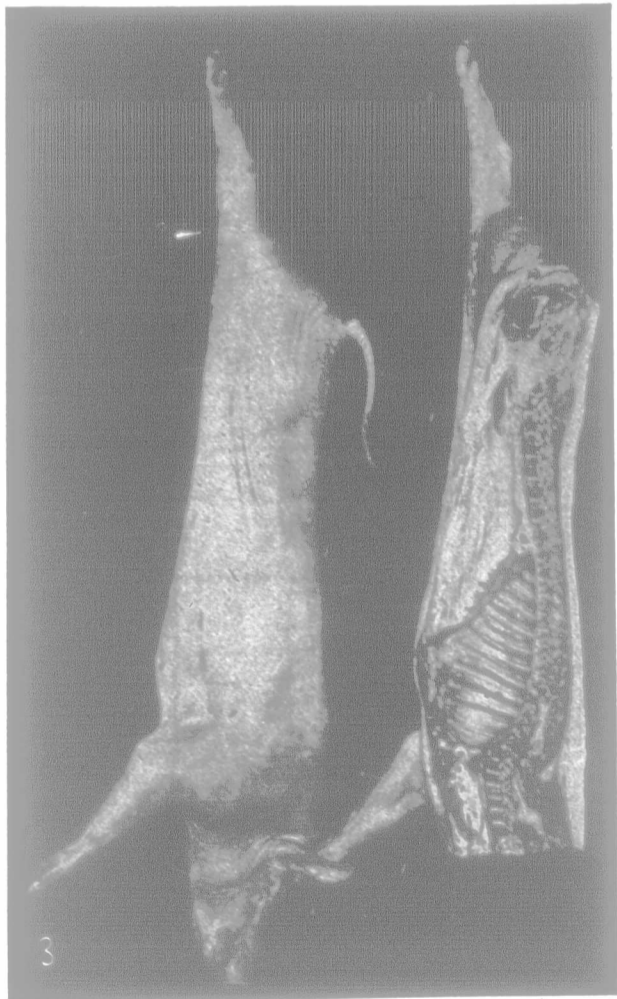


FIGURE III.—REPORT ON SWINE CARCASSES.

A lean old stag. Quite unfinished, and quite undesirable. Rated by the packers at 4 cents a pound. Note:
1. The lean ham and coarse, scrawny head.
2. The side, long enough, but altogether too light and thin.

stallion and mares sired by either Cleveland Bay or French Coaching stallions. This is an exceedingly happy combination, and will be found very productive of good results; in fact, many of the finest types of carriage horses that I have ever seen have been produced in this way. Of course, the Hackney trotter cross will be productive of more speed, but horses of majestic presence, beautiful proportions, grand heads and necks, high, graceful, all-round action, and the size and substance, without coarseness, that go to make up the perfect heavy harness horse of the type seen in London and other fashionable European capitals can be produced in this way. The production of the smaller type of harness horse

is much easier of accomplishment, namely, horses standing from 14 hands to 15 hands 2 inches high, and suitable for a brougham, Victoria, mail or park phaeton, dogcart or gig or any of the numerous runabout traps in use in the city. Nearly all sections of the country have on hand a supply of small mares that could be utilized for that purpose. I would suggest using trotting-bred mares with quality and speed, and if they should happen to possess some Thoroughbred blood, so much the better. Morgan mares are also well adapted to the production of this class of horse; in fact, as a breed I know of none better, as they possess all the requirements for mating with a Hackney stallion, in a marked degree, to produce the sort of horse that is always in demand and at remunerative prices. Horses thus bred will be found useful on the farm for all purposes, except that of heavy draft, and I may add that the finest farm team I ever saw were sired by the Hackney stallion, Brown Fashion, and from an imported Percheron mare. These horses were 16 hands high, weighed 1,400 pounds apiece, with handsome heads and necks, and were models of beauty and strength. They were iron grays, and carried beautiful coats all the year. So that while the half-bred Hackney has especial fitness for the ornamental display required for park and city driving, he need not be considered by any means a drone in the industrial life of the farm, and need not eat the bread of idleness for any great length of time, as he will be well matured at 4 years old, but can be worked at 3 if given fair care. The war in South Africa has opened up another field of usefulness for horses of this type, and for artillery and transport purposes no better animal exists, while a good cavalry horse can be produced by the use of Hackney stallions and half-Thoroughbred and Thoroughbred mares. Of course, the war is happily now almost at an end, but the enormous number of horses used up in this campaign will leave a great shortage of horses in Great Britain that will have to be supplied from elsewhere, and it is safe to assume that Canada will be a large contributor, hence the suggestion.
Shelburne Farms, Vt. WILLIAM WEST.

Successful Pig Raising.

I have been extremely successful in regard to raising pigs, and often have been asked to what I attribute mainly my success. I answer: A multitude of things. First and foremost, I use common sense. Then, I read a great deal. I have always carefully studied the *Advocate*. After I read, I keep thinking and apply in my own case what I have learned. Another way I learn is by watching how and why others fail, and avoid the same pitfalls. Yet, beyond this there are, of course, practical things one must do every day, particularly the day it is needed to be done.

We will suppose that the critical time is over and that the farmer has a litter of good, healthy pigs, of well-bred stock, a few hours old. He thinks all is well. He congratulates himself that, having escaped the dangers that are so thick at the time of farrowing, he should have no further trouble. Every pig is lively and well-developed—not a runt amongst them. The mother pig shows no disposition to eat them and is careful not to overlie them. All should be well, but there are still always two great dangers right before the pig-raiser. Into these dangers he may very ignorantly run, but if he thinks a bit he can easily avoid them. Millions of pigs die annually because of these mistakes. The first is overfeeding the sow with rich, heat-producing feed. There is no one cause in the whole of hogland that occasions so much loss as overfeeding. Make it a firm and fast rule to always feed sparingly, if any, of corn for the first week. Corn is a great heat-producer. A failure to pay close attention to the matter of diet at this time will often result in fever. This fever dries up the milk, the insufficiency of which actually starves the pigs to death. Perhaps the pigs will not really die, but the result is nearly as bad. The sow loses appetite, runs down rapidly in flesh, the little pigs live but do not thrive. They keep dwindling down, and before weaning time the sow herself is like a skeleton. Instead of feeding corn, feed for the first week house slops and bran and just a little corn for a relish—perhaps one ear at a meal. Then, in the second week gradually increase, so that by the third week you may feed as heavily as you please, provided the sow and pigs have ample exercise.

The next great mistake is lack of exercise for the young pigs. If the sow is kept in a close pen and proves to be a good suckler, it is often the case that in two or three weeks the little pigs become too fat, take congestion and die. Oftentimes I have seen a farmer with a valuable litter of pigs. He sees them fat and healthy-looking, yet they die one after the other until the whole litter has disappeared. He had no idea what was the matter. He did not realize that want of exercise in the close, shut-up pen and lots of rich milk was causing the fatal disease. Guard against this by letting the sow and pigs have more room.

Still another point in the raising of wee pigs is cleanliness. They want a clean bed. This is very important. If allowed to sleep in dust they are quite liable to die of thumps, and if a wet place or

a manure pile they get mangy or contract colds and die.

But, we will suppose that the farmer has had forethought and has guarded against all these dangers, and the first four weeks are safely passed. The pigs are a fine lot and the mother is in good condition and having a good appetite. It is now time to begin to prepare for weaning. Make a pen near where you feed the sow and arrange it so the pigs can go in and out at pleasure, but let it be not accessible to the sow, and begin feeding with milk and soaked corn. The quantity must be very small at first and only what they will eat clean. Increase gradually, and by the time they are eight weeks old they will be eating enough so that they can be weaned without checking their growth. If,

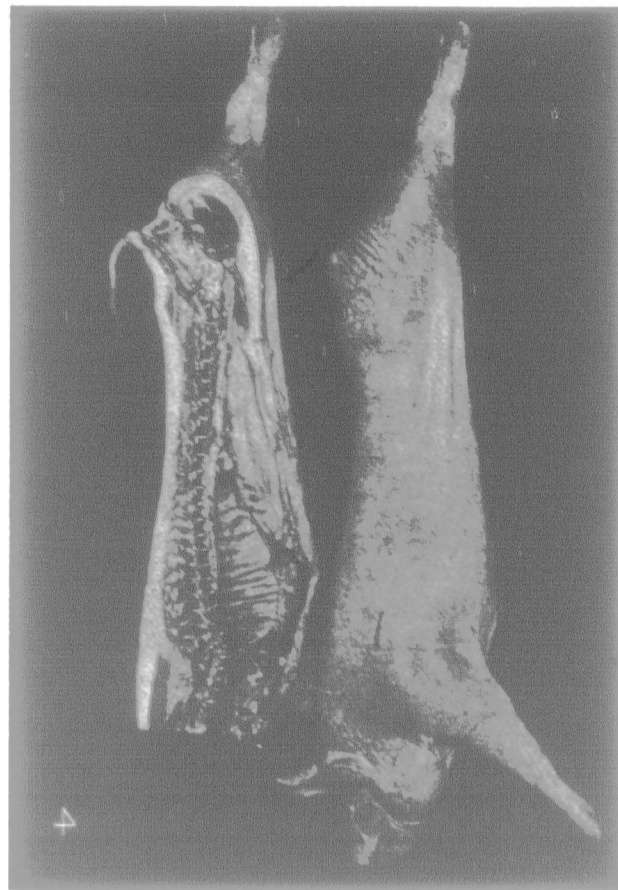


FIGURE IV.—REPORT ON SWINE CARCASSES.

A prize carcass. The sweepstakes for all breeds. Note:
1. The long, tapering ham, quite fat enough, as is shown by the left half of the figure.
2. The long side, and comparatively light crown.
3. The evenness and proper thickness of fat over the back.
4. All that need be said of the head is, that it is typical of the breed.

as is often the case, there are in the litter two or three pigs that are not quite up to the average, it will be good, both for the sow and them, to let them run with the mother a week or two longer than the others which are larger and better developed.

After weaning, feed liberally for four months. No matter what is to be the future destiny of the pigs, feed liberally just the same. Do not aim to make them fat, but aim to get all the development of bone and muscle that you can. The food should not be corn exclusively, for we want more of the flesh-forming foods, and they should have the run of pasture and be fed on bran chop with the corn. Exercise, a varied diet, with part bulky food and not too much corn, will give a profitable hog.

One great fault in the management is to keep too many hogs together in one shed or enclosure. From want of proper protection in the way of housing, hogs are very apt to crowd together in bunches during cold weather, and coming into the sheds wet and dirty, and being obliged to lie either on old and filthy straw bedding or on a wet and damp floor, their sweating and steaming soon produces a foul atmosphere, and the bedding, not being removed at proper intervals, gets rotten and adds to the contamination of the air. Being thus packed together in the building, the hogs, in a warm and perspiring condition, are next exposed to the influence of cold winds and wet weather by being turned out in the morning hours to run in the field among grass wet with cold dew or from rain or hoarfrost, or to be fed from troughs in the yard. Among the common consequences are congestion, cold or catarrh, and if the so-called hog cholera happens to be prevailing they are almost certain to contract that disease, as their systems, under such management, are rendered predisposed or susceptible thereto.
ROB. RICHARDSON.

Curing Hams.

An exchange recommends the following recipe for curing hams: To 100 pounds of pork use 2 quarts coarse salt, 2 ozs. black pepper, 6 ozs. sugar and half oz. saltpetre: dissolve saltpetre in pint of hot water; mix all in a vessel large enough to lay one ham in, and rub each piece thoroughly, particularly where the leg was cut off; let lay on table three days, then rub again with the mixture; pack in a box; let lay from 12 to 14 days, then smoke. Light salted as they are, these hams keep well in summer if put up in tight, heavy paper bags and hung in a dark closet, or packed in bran or oats.

Care and Feeding of Brood Mares and Young Horses.

To the Editor FARMER'S ADVOCATE:

Allow me to say in the outset that in my opinion there is no cast-iron rule to be laid down for feeding brood mares and young horses. I would always prefer to have in-foal mares doing light work in the winter, and right up to the day the foal is dropped; but on a farm, as a rule, that is impracticable, for the reason that most farmers have perhaps only one or two days a week that they have work to do, and then very often the work is not such as an in-foal mare should be compelled to do. After the fall work is done we usually allow our brood mares to run in box stalls which are not too warm and are properly lighted, always taking the manure out at least every other day, keeping them well bedded

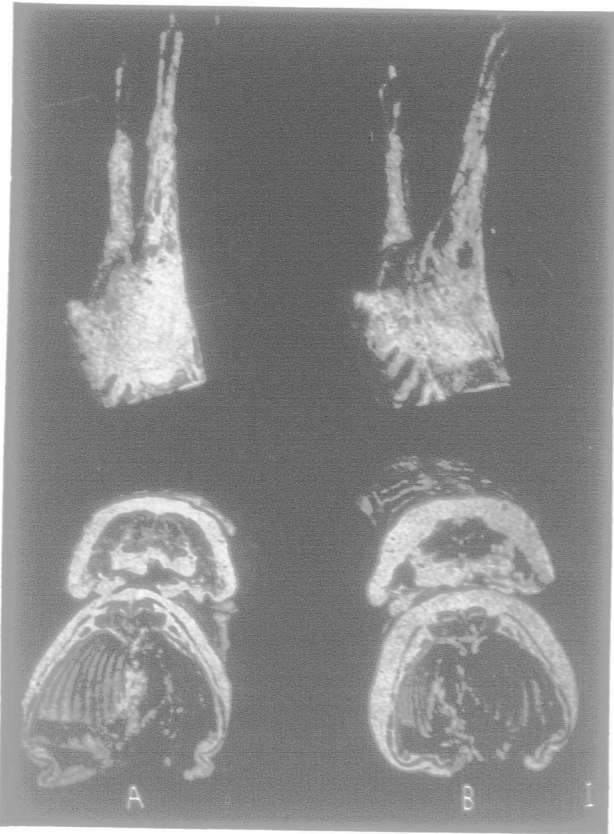


FIGURE I.—REPORT ON SHEEP CARCASSES.

First and third prize, respectively, in the same class. Note: 1. The difference in the amount of fat. As between these two, B loses it chiefly on account of excess of fat. This animal had been prepared as a prize animal the year before, and had been kept over. Fed altogether too long to be profitable, either commercially or for prize purposes. The broad, heavy rump indicates fat throughout. 2. In the live class, B won second, and A won no prize. Here is a point for the judges in the live classes to consider.

with dry straw and allowing plenty of fresh air to circulate. Turn the mares out for water in the morning, and always give them the use of the barnyard in the afternoon, unless it is very stormy. In that way they will generally get exercise enough. Our practice in feeding is to give the in-foal mares a small feed of oats in the morning, and a few boiled oats or barley, mixed with a little bran, at night, with a few roots during the day; also a small quantity of good hay twice a day, with whatever straw they care to eat. As to quantity, that depends on circumstances. Some mares will take more exercise than others, and some will require more feed than others. Therefore, it is very important that sound judgment should be used in the feeding of brood mares.

Foals should always be taught to eat, and be broken to lead by the halter before they are weaned. The first winter being without a doubt the most important in a colt's life, I say feed liberally with good feed—oats (whole or chopped), bran and roots in such quantities as the age and size of the animal requires. If you have any skim milk to spare, give the colt some to drink, or it is a good plan to mix the chopped oats and bran with it.

I don't think it a good practice to have two or more foals or young horses loose in the same box, for the reason that after they have been feeding together for a time, one is almost sure to become boss of the other, and will get more than his share of the feed, even if you have separate mangers to feed them in. I would always let them out in the yard along with the other horses, so that they will get plenty of exercise.

In my opinion there is nothing better for colts and young horses than good clean clover hay. It is needless to say that only the best should be fed. It is also important that all horses have free access to salt.

JOHN GARDHOUSE.

Cure for Ringworm.

DEAR SIR, I enclose a recipe for ringworm in stock, which I have found very good, having used it four or five years. It only costs about 15 cents for the drugs besides the band, which a farmer generally has on hand. 2 ozs. Venice turpentine, 2 ozs. black soap, 1 lb. lard.

ROBT. ROBERTSON.

An Unreasonable Regulation.

To the Editor FARMER'S ADVOCATE:

SIR,—Just a few words in reference to a matter that may be of some interest to some of your readers in the East as well as many in the West. I refer to the tuberculin test as applied to thoroughbred cattle exported to the United States, or, rather, the new regulation regarding it. I do not propose to discuss the question of the test itself, more than to say that, so far as I am aware, it is generally admitted by those whose experience entitles them to speak with some authority that the test is not at all reliable. The question, however, that will soon begin to concern the breeders of Manitoba, and those in the East from whom they have been getting their stock, is what is to become of a large portion of our trade if things remain as they are? As you are aware, the recent new regulations adopted by the Department at Washington provides that vets. appointed by them shall do the testing, instead of allowing the work to be done by those appointed by the Dominion Government, as formerly. So far as that goes, I do not know that any serious objection should be raised by Canadians, especially by the Departmental authorities at Ottawa, who, I am told, did what they could to induce the U. S. people to adopt the test, but if this—to my mind, worse than foolish for the purpose intended—test is to be maintained, we need more conveniences for using it. My information is, that for the purpose of enforcing the terms of this restriction between the two countries at the present time, a gentleman residing at Buffalo, N. Y., has been appointed by the U. S. Government to attend to the whole business. Now, I submit that there is a small strip of Canada which is not convenient to that city, and those whose business interests are in that strip and sometimes need a veterinarian for the purpose will be unable to avail themselves of the services of the gentleman referred to. Therefore, other appointments should be made. It appears to me that those interested in the development of the West, and a business for which it is known to be so well adapted, those who are supposed to be the guardians of such interests, should stir themselves and have this important matter put in a different shape.

THOS. GREENWAY.

"Prairie Home Stock Farm," Manitoba.

Some Pertinent Suggestions.

To the Editor FARMER'S ADVOCATE:

SIR,—I write to commend the stand taken by your paper in regard to the tuberculin test, and to express my conviction that the resolution asking for the removal of the regulation requiring the compulsory injection of tuberculin in case of purebred imported animals adopted by the Dominion Cattle Breeders' Association, published in your Jan. 5th issue, was an eminently fair and reasonable one. As a scientific agent, it is not sufficiently exact to be relied upon, as numerous cases show, and since tuberculous lesions may exist in parts of the animal as not to be transmissible by contagion or otherwise, and as human consumption is not due to that source, and being of no benefit to animals, it is therefore useless. More than that, too much evidence has come to light of its injurious effects, mainly upon breeding females, in a way that stockmen know causes more actual loss than all our other live-stock ailments combined. Until the owners feel that they stand on safer ground, I surmise that there will be a very general disposition, as a matter of ordinary prudence, not to allow tuberculin injection into cattle, especially by foreign officers, who naturally desire the fad perpetuated. The international agreement which our Minister of Agriculture effected some years ago has been violated, and we witness the extraordinary spectacle of U. S. veterinarians now coming into Canada to make the test injections. Do our people realize the significance of this? I very much mistake the spirit and temper of British cattle-breeders if they permit the emissaries of a foreign country, of whose character they know nothing, to tamper with their stock. Unless I am much astray, the occupation of the itinerant temperature raiser will soon be gone. Fortunately, this is a question out of the realm of party politics, and my humble advice to every farmer and breeder is to write at once to our representative in the Cabinet at Ottawa, Hon. Mr. Fisher, the Minister of Agriculture, urging the prompt withdrawal of the injurious regulations upon the importation of stock for the further improvement of our herds.

I remain, yours, etc., B. C. A.

Sewer Pipe to Exclude Surface Water from Wells.

To the Editor FARMER'S ADVOCATE:

SIR,—I see an inquiry in Jan. 21st ADVOCATE re excluding surface water from well. A number of wells in this locality have been lined with sewer pipe: some with 18-inch and some smaller. I do not see why they would not answer in L. G. Troup's case. He would need to fill the collars at the joints with cement, and also cement around bottom of first pipe where it joins the rock, else the surface water might work through the joints.

I have been taking the ADVOCATE for over 20 years—in fact, was brought up on it, and have not yet learned to do without it.

F. R.

The Selection of Suitable Breeds of Poultry.

The selection of breeds suitable to the country in which they are to be kept is of the greatest importance in poultry-keeping. The first consideration is, what will be the most profitable kind to keep in this country for meat or eggs, or both? Fowls may be divided into two great classes: (a) utility, (b) fancy. The former may be subdivided into (1) general purpose, Plymouth Rocks and Wyandottes; (2) egg producers, of which the Leghorns and Minorcas are the foremost; (3) fowls for meat, the Brahmans, Cochins, and Langshans. A singular fact in connection with the keeping of poultry here is that people who have never dreamt of buying improved stock for breeding will, when they see the necessity of so doing, go in for some variety that is unknown to any but professional poultrymen. This can only be attributed to the fact that they do not read any paper which could teach them differently. Some farmers think when they subscribe to a Sunday-school paper and an agricultural journal from the States, at three years for a dollar, they have all the papers worth taking. All kinds of chickens are equally recognized in the prize lists of our fairs, which is a great mistake. Only a few of them are of value to the farmer. Would it not be advisable to cut down the list to include nothing but what is suitable for this country? This principle has been applied to the classes for cattle, sheep and pigs, the suitability of a breed for the country being arrived at approximately by the competition taking place. Why is it not applied to the poultry also? What is the use of encouraging fowls that are neither recognized as good for eggs or for meat? Everybody must admit that our Experimental Farms are doing a great deal to enlighten the farmers, and that they are very successful as far as they go, but at the same time one cannot but admit that their experiments with poultry are not as extensive as the importance of the industry warrants, considering the means at their disposal. Every year hundreds of different varieties of grains and roots, etc., are experimented with, and everything about them is noted that is worth noting; but with poultry, so few breeds are kept, and these in such small numbers, that the information gained is of comparatively little value. Could they not start with every one of the popular breeds and weed out from time to time all that are undesirable? In



FIGURE II.—REPORT ON SHEEP CARCASSES.

Of these two, B is too thin to compare favorably with A. A is not too fat, and the fat and lean are fairly well mixed.

looking over the reports of several years, one is struck with the singular lack of system observed. As will be noticed, they do not keep the same number of birds of each variety, nor do they have them of the same age. It is, therefore, impossible to properly compare one kind with another.

One of the best things that the Dominion Department of Agriculture has undertaken for years was the establishment of poultry-fattening stations. When first started, the right kinds of fowl were difficult to obtain, as most farmers kept a mongrel type of chickens which were neither good for meat nor eggs. Now, owing to the use of pure-bred males of the heavier breeds, which the instructors advised, no trouble is found in procuring suitable birds.

Brandon District.

KING BROS.

Abortion and Carbolic Acid.

SIR, I know how very easy it is for a man to criticise and find fault, but there is one paragraph in Mr. Rice's letter on the subject of "The Administration of Carbolic Acid" that should not go unchallenged to the readers of your paper. I have no desire or intention to enter into a discussion on the subject of abortion in cattle. There are a great number of able men in Great Britain, Denmark and Germany who have and are at present making daily observation and experiments on this very obscure disease, so that I shall not attempt to describe or in any way touch the subject, only to say that carbolic acid was tried for every contagious disease twenty years ago and failed in every instance to control or prevent infection by internal administration. Therefore, I desire to draw your attention to one or two very misleading statements in his letter.

In the December issue, page 661, "he had tried carbolic acid for milk fever, and being a student and keen observer, made a study of the trouble, and after having found carbolic acid good to prevent abortion and also to hasten the complete delivery of a retained afterbirth (and why not the foetus?), gave it a trial for the prevention of milk fever, and found it a real success." On page 45, January 21st, 1901, he makes the following remarks: "I have received a number of letters; this must be my reason for writing upon this subject, because I cannot say that I have had any great experience with abortion (happily)." Then he goes on to quote a Mr. William Watson's ideas (now deceased). What I would wish particularly to point out is the fact that this gentleman first of all asserts that he has cured abortion, and in the next breath says he has had no experience in the disease. The harm that may arise from such a rash and unconsidered statement is incalculable. Carbolic acid is a virulent poison, and even so small a dose as 20 drops three times a day will cause indigestion, and as he very naively puts it, "giving any cow a few drops of carbolic acid will do no harm (not to his cows, but what about his neighbor's?), no matter how long she may be bred, and it may do a world of good." In the last paragraph: "If trouble were feared while the cattle were in the pasture, I have mixed diluted creolin with the salt. They could not get an overdose of the medicine, because they would not eat enough, and if some will not eat any, but only smell it often, it will do some good." What I desire to say is, that an experienced breeder should be more careful of his statements. There is no doubt that some breeders will rashly try this method, and perhaps with unfortunate results.

SEMPER PARATUS.

A Handy Wire Tightening Device.

In a recent issue is described a method of

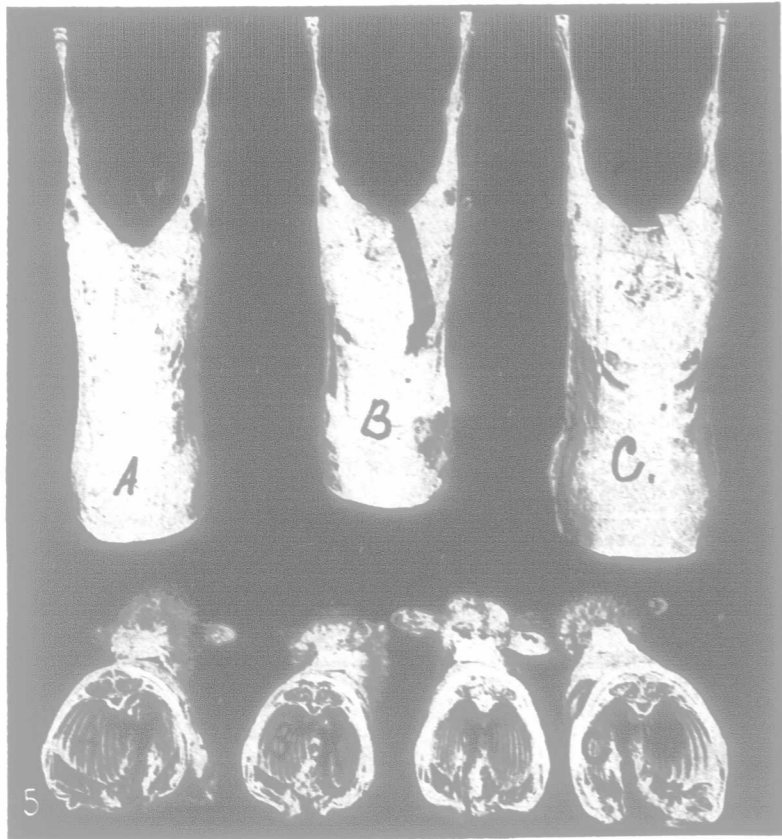


FIGURE III.—REPORT ON SHEEP CARCASSES.

A choice lot of lambs. Any one of them apparently worthy of a prize. The decision was given in favor of B, on account of the better mixture of fat and lean over the ribs. A is a little too thin.

stretching wire in building fences by the turning of the wheel of a waggon anchored to a stake in the ground. We have a more simple and effective plan. After the wires have been reeled off and lying on the ground, take an ordinary drag boat, put stones enough on it to make a tidy load for one horse. A loop of rope a few feet long is hitched on the wire and put on an upright iron pin or bolt in the rear bar of the boat; then drive on the horse and the strain of the tightening wire stops him, while the load of stones holds the boat to the place with the wire tight. After it is stapled to the posts, with a stick or the hammer handle spring the rope from the iron pin and hitch on to the next wire; a few steps forward and it is tight also. One hundred and fifty yards at a time can be done nicely. Always put the top wire of a fence on first. Macdonald Municipality, Man. A. DRYDEN.

Spelt, Spelts or Speltz Wheat?

BY WM. SAUNDERS, DIRECTOR DOMINION EXPERIMENTAL FARMS.

Many inquiries have lately been made by correspondents of the Experimental Farms as to the probable usefulness of spelt wheat in different parts of the Dominion.

This variety of wheat is known to botanists as *Triticum spelta*, and is distinguished from other wheats by the adherence of the chaff to the kernel and by the brittleness of the rachis or central stem of the head, on which the spikelets are set. For these reasons the grain cannot be threshed like ordinary wheat, but requires special machinery to separate the kernels from the chaff. This is a very ancient form of wheat. Hackel, in his book on "The True Grasses," says "spelt is one of the oldest grains in cultivation; that in early times it was much cultivated in Egypt and Greece, and subsequently in Roman colonies." It is three times mentioned in the Bible. In Exodus, 9th chapter, 31st verse, we read, "but the wheat and spelt were not smitten, for they were not grown up." The other references are in Isaiah, 28th chapter, 25th verse, and in Ezekiel, 4th chapter and 9th verse.

Within more recent times the cultivation of spelt wheat has greatly decreased, and in most countries has been almost or wholly abandoned. It is still, however, grown to a considerable extent in hilly and mountainous districts in some parts of Germany, Switzerland and Northern Spain.

Hackel says, as the results of experience in Europe: "Spelt has undoubted advantages over naked wheats when grown upon poor soil and with moderate culture. Its demands are less, it is more certain, liable to fewer diseases, and not at all subject to the attacks of birds." He also says that "upon better soil and with reasonable cultivation, the returns are better from common wheat." The late Henry Vilmorin, the well-known French authority on cereals, in his work on wheats, after enumerating the different forms, bearded and beardless, of spelt wheats, speaks of them as being very hardy, remarkably proof against all diseases, enabling people on poor lands and in hilly regions, where other wheats could not be successfully grown, to obtain grain, and subsequently flour. For this reason, he says, they deserve the attention of the agriculturist.

The spikelet of the spelt wheat usually contains but two kernels. These are rather narrow and elongated in form, brittle and ricy in character; in this respect resembling goose wheat.

Among the first importations of foreign wheats made in the spring of 1887 for test on the Dominion Experimental Farms were two varieties of spelt wheat. These were tried at the Central Farm for two years, but the results of their growth here were not encouraging and their cultivation was discontinued.

In the autumn of 1899, when visiting the Experiment Station at North Dakota, U. S., I learned that spelt wheat was grown in some parts of that State as a substitute for barley, and was said to be more productive. Having secured a supply of seed, I arranged for a test to be conducted at all the Dominion Experimental Farms, which was carried out last season with the following results:

Central Experimental Farm.—Sown May 1st; ripened August 18th; time to mature, 109 days. Made strong growth; straw bright, but rather weak and slightly rusted. Length of straw, 30 to 34 inches; length of head, 2 to 3 inches; yield of grain, 2,000 pounds per acre.

Experimental Farm, Nappan, N. S.—Sown May 26th; ripened Sept. 8th; time to mature, 105 days. Growth medium; straw moderately stiff, 34 inches long, slightly rusted. Length of head about 2 inches; yield of grain, 2,640 pounds per acre.

Experimental Farm, Brandon, Man.—Sown April 26th, with a similar plot of Red Fife alongside on April 28th. Both ripened on August 21st, the spelt taking 117 days to mature, and the Red Fife 115 days. Yield of spelt wheat, 2,740 pounds per acre; Red Fife, 1,380 pounds.

Experimental Farm, Indian Head, N. W. T.—Sown April 13th, on clay loam; ripe Sept. 10th; time to mature, 149 days; yield of grain, 1,320 pounds.

Experimental Farm, Agassiz, B. C.—Sown May 11th; ripe August 18th; time to mature, 99 days. Made a strong growth, and did not appear to be subject to either rust or smut. Length of straw, 48 in.; length of head, 2½ in.; yield of grain, 1,340 lbs.

The weight per measured bushel of spelt wheat ranges from 40 to 45 pounds, but as there seems to be no definite standard for this grain, the results of our experiments are given in pounds.

Comparing the yields of spelt wheat at the different Farms with the average given by the best six varieties of six-rowed barley at each of these Farms for the year 1900, we find the following:

Ottawa—	Lbs. Per Acre.
Average yield of six vars. barley	2,792
Average yield of spelt wheat	2,000
Difference in favor of barley	792

Nappan, N. S.	Lbs. Per Acre.
Average yield of six vars. barley	2,725
Average yield of spelt wheat	2,640
Difference in favor of barley	85
Brandon, Man.—	Lbs.
Yield of spelt wheat	2,740
Average yield of six vars. barley	1,992
Difference in favor of spelt wheat	848
Indian Head, N. W. T.—	Lbs.
Average yield six vars. barley	2,320
Yield of spelt wheat	1,320
Difference in favor of barley	1,000
Agassiz, B. C.—	Lbs.
Average yield of six vars. barley	1,967
Yield of spelt wheat	1,340
Difference in favor of barley	627

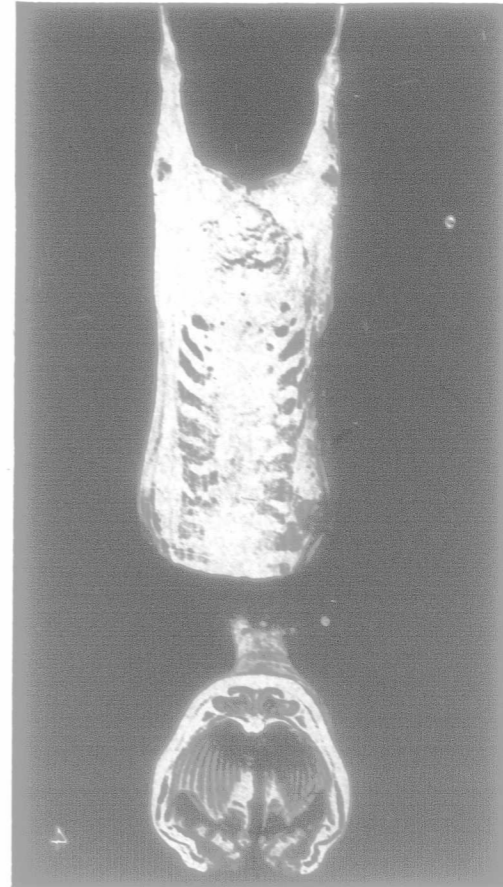


FIGURE IV.—REPORT ON SHEEP CARCASSES.

A prize carcass. Sweepstakes over all breeds. The live animal and the dressed carcass won at Chicago and at Guelph, in December, \$127 in prize money.

Spelt wheat will be further tested, and it may be found of value in some parts of our great country, but the experience had in 1900 at the Dominion Experimental Farms seems to indicate that spelt wheat on the average is inferior in productiveness to the best varieties of six-rowed barley.

A Poet's View.

About the FARMER'S ADVOCATE

I'd like for everyone to know:
But that would take a page or two,
And then the half would have to go.

It misses nothing on the farm.
It speaks of horses young and old—
Both how to raise and how to work—
And which is worth the most in gold.

For cows, it makes the line so plain
That any reader now may know
Just what to feed the cow for milk
And what to make the young calf grow.

The information, too, 'bout pigs
Is worth the dollar that we pay,
And many times throughout the year
'Tis worth far more just in a day.

It don't forget to speak of sheep,
And of the different kinds as well.
It points the breed, the size and shape
So plain that anyone can tell.

But then we can't keep on at this—
I see the list would be too long:
There's turkeys, hens, and geese, and ducks,
And how to grow them big and strong.

And then the grain is not forgot,
And implements are kept in sight,
And if there's anything we want,
It tells us where to get it right.

The Christmas numbers—Oh, no! No!
We dare not speak of them at all.
We could not justice do to them.
They're just magnificent—that's all.

Jan., 1901.

A. J. M.

That winter is the season when farmers find most time for reading and writing is evidenced by the many letters received at the office of the ADVOCATE expressing appreciation of the paper, and by the rush of contributions on practical subjects for publication, many of which we are compelled to hold over for lack of space in present issue.

Creamery Buttermaking --- The Creamery Described --- Pasteurizing the Cream.

BY J. W. HART, KINGSTON DAIRY SCHOOL.

It has been a great source of satisfaction to our dairymen that prices of dairy produce have ruled so high for the season now about closed. At the same time it is a matter for regret that the butter exports have fallen off so materially. The exports of butter for this year of 1900 will be two million dollars less than in 1899. At the same time the importance of our butter industry is not measured by the exports to the same extent as is the cheese manufacturing business. With the majority of our people butter is a necessary adjunct to the daily diet, while cheese is partaken of more as a luxury and is not found on the regular bill of fare.

There can be no doubt but that the quality of our butter is steadily improving, and with this improvement in quality we naturally expect a greater consumptive demand. Again, with the greater industrial prosperity prevailing during the past season, the per capita consumption of butter has been largely increased. The high relative price of cheese has tempted the combination butter and cheese factories to manufacture cheese instead of butter. If the farmers fully appreciated the high feeding value of the skim milk as compared with whey, they would usually find it to their advantage to have butter made rather than cheese during the fall, winter and early spring months. Especially is this true where the calves are being raised. By means of separator skim milk, the calves can be fed much more economically and quite as satisfactorily as if they were allowed to take the milk in nature's own way.

It has been said that there are two classes of farmers—those who consume at home what they cannot sell, and those who sell what they cannot dispose of at home. We sell our cheese because we do not care to eat it, while we eat nearly all of our butter because we esteem it so highly as an article of food that we do not care to sell. As an indication of present home requirements, it is stated that in Montreal about 550 packages of butter, averaging 60 lbs. each, are consumed daily. In Toronto probably as much more is eaten, and it is this growing local demand for creamery butter that is largely responsible for the falling off in exports. While the value of milk and the products manufactured from it is being better appreciated than formerly, there is still room for a great deal more of our milk supply to be economically consumed in our homes. Prof. Atwater, the eminent American authority on nutrition, states that a quart of milk contains as much nutriment as a pound of the best beefsteak. There are yet too many homes where milk is regarded as a luxury instead of being appreciated as one of the best and cheapest tissue-building foods that can be obtained.

The patrons of our winter creameries sometimes state that it costs too much to produce milk in winter, and I know a number of farmers allow their cows to go dry rather than milk them during the winter months, on account of the expense. Others, again, who are making a study of the business, find many ways of reducing the cost of production and report that they find the production of winter milk profitable. How can we reconcile those conflicting statements, and how can we induce those farmers who are not producing milk economically, and those whose cows are standing in the stable idle and a source of expense to their owners, to so breed, feed and handle their cows as to produce cheap milk? There is no doubt but that corn silage forms the basis of the cheapest winter food, and milk is produced more economically where it is part of the ration. I say a part, for no intelligent dairyman will feed corn silage without bran, pea meal, clover hay or some other available feeding stuff rich in protein. Corn silage supplies the heat and force-producing part of the ration, while the clover hay, bran, pea meal, etc., are needed for the sustenance of the cow's body and for the growth of the calf. A great deal of the prejudice against silage is on account of this fact not being appreciated, the silage being fed without any knowledge of its composition and its uses in the animal body, and the proper feeds not being given along with it to form a balanced ration. It is true that some of the owners of milk-condensing factories object to the use of silage, but the cause of their opposition to silage feeding is on account of the stables being badly ventilated and the milk left setting in the stable after it has been milked. Where silage is properly fed we get a much finer quality of butter in winter at less cost as compared with dry feed.

The inevitable effect of the high price of cheese prevailing during the past season is to cause a large stream of milk to be turned in that direction. This in its turn will bring about a scarcity of butter, so that we are likely to have a reaction in favor of buttermaking. Already there are signs that there will be a great scarcity of good butter before the grass springs again.

THE CREAMERY.

The tendency to build small and poorly-equipped creameries should be discouraged. These cannot be operated with profit to anyone, and are a constant source of loss to all interested; in fact, the decline in winter buttermaking can be largely

traced to these small concerns where the output is not large enough to enable them to hire a thoroughly-skilled buttermaker. Where one large and modern creamery, in charge of a good buttermaker and properly equipped with a buttermaking outfit, having its outlying skimming stations, and in which could be made the finest grades of butter at the lowest possible cost, would be a profitable investment, we often find a number of small and inferior plants grafted on to as many small cheese factories. Hundreds of such plants scattered all over the country, the most of them closed for the lack of patronage, attest the folly of attempting to carry on the business of creamery buttermaking in small and poorly-equipped creameries. Rather than adopt this style of creamery buttermaking, let us go back to private dairy, where at least everything was under the control of one responsible person. We have, however, a number of successful creameries—and I am glad to say that the number is increasing—where skilled buttermakers are employed and where the butter produced is of the very best quality.

In building a creamery, we should have sufficient faith in the permanency of the business to erect a neat and substantial building. The building should not be set up on piers or cedar blocks, but put on a solid stone foundation. The floor should be of cement. A good cement floor is practically indestructible and will prove the cheapest in the end. In the buttermaking department of the Kingston Dairy School, the wooden floor had been laid about six years. Under the separators it had rotted so badly that it was necessary to replace portions of it in four years. It was no ordinary wooden floor. The joists, three by eight inches, were laid 12 inches apart, and the best quality of 1½-inch pine flooring, tongued and grooved, was used. To preserve it and add to its appearance, it was always kept well oiled, but when it was taken up it was found that some of the joists had rotted completely away. Last summer it was entirely removed. In laying our cement floor it was necessary to fill in about three feet: large stones were used, and these were well hammered down. These stones were laid to within six inches of the old floor line; next a layer of concrete was spread to the depth of 4½ inches. This concrete was composed of one part best Portland cement, three parts sand and five parts rock broken to pass through a 2-inch ring. Before this had thoroughly dried, the surface course was laid. This surface course was 1½ inches in thickness and consisted of one part best Portland cement and two parts crushed granite, mixed dry and afterwards mixed with water. This left the surface of the finished floor one inch below the level of the old floor line, which allowed the edges of the floor being raised to the old floor level to throw the water away from the walls. The floor slopes to ample gutters, and these gutters are connected with trapped drains. The contract price of the floor was \$2.00 per square yard, and so far it has given complete satisfaction. In laying a new floor, the walls for some distance above the floor should be of stone or brick, so that in the daily scrubbing the walls would not be constantly wet and thereby decay in a short time. If stone were plentiful, I should like to have the stone foundation walls continued up as high as the window sills. In many factories there is more water on the floor than is necessary; some slop is unavoidable, and the building will be damp unless it is properly ventilated. The ceiling should be quite high, at least ten feet, and the ventilator should run from the making rooms up through the highest part of the roof. These ventilators can be provided with slides operated from the floor, so that the air inside can be kept comparatively dry at all times. In some cases where a creamery plant has been installed in a cheese factory, the partition between the boiler room and the factory proper has been taken away in order to utilize the heat from the boiler in warming the room. The dust, ashes, smoke and smell of grease from the engine room will not improve the quality of the butter, and some other means of heating the building, preferably steam pipes or radiators, should be used. All the machinery should be the best of its kind, and should be arranged with special regard to saving labor. With economy of production we want economy in manufacturing, so that the largest possible net returns will go to the man who handles the cow.

PASTEURIZING THE MILK.

At the Kingston Dairy School our custom is to pasteurize the whole milk. In some cases we have brought the milk up to boiling point and have failed to discover any injury to the cream or butter owing to the high temperature. Up to within a short time ago our practice was to cool the cream as soon as separated down to 50 degrees or lower. I do not find, however, that there is any advantage in cooling it so low, and am satisfied if it is brought to 70 degrees and the starter at once added, we not only save ourselves the trouble and fuel required to heat the cream to ripening temperature, but get the process of ripening completed earlier in the day and do not have to attend to the cream at night. Our practice is to take rather rich cream from the separator, say about 40 per cent. fat, and to use quite a heavy starter. By this means we get the cream ripened in six or eight hours and can allow considerable time to elapse before churning it the next morning. In winter, when we are troubled with

stable taints, by all means take a heavy cream and ripen with an ample starter. By having the cream held a long time at a low temperature we get that firm waxy butter so highly esteemed by the trade. A great advantage in pasteurizing the milk is that we are enabled to return the skim milk sweet to the patrons. We also get more exhaustive results in separating and churning. At the same time, I cannot say that there is an increase in the butter over handling raw cream, probably owing to the fact that the butter made from pasteurized cream contains less moisture. Between Nov. 19th and 30th, in the dairy school, we received 26,956 lbs. of milk, which contained 1,233.63 lbs. of fat, from which was churned 1,384 lbs. of butter, being 112 lbs. of butter to 100 lbs. of fat in the milk. This I think rather a good average, as all the butter was made into pound prints.

In Scandinavian countries, pasteurizing is almost universally practiced, and we know that their butter brings the very highest prices in the British market. In Denmark their custom is to heat the milk to about 90 degrees for separating, following which the skim milk and cream are separately pasteurized. To prevent the spread of tuberculosis, the law compels the pasteurization of the skim milk. In Norway and Sweden the practice is to pasteurize the whole milk, as we do the most of the time at the dairy school. We cannot expect that our creamery butter will supplant the Danish so long as we continue to export butter made from raw cream during the winter months. In the local markets, too, we find the pasteurized creamery butter very much sought after.

From a national standpoint there is another phase of the export business to which we shall be compelled, by the diminishing fertility of our farms, to pay more attention. To maintain soil fertility, we must return as large a proportion of the fertilizing constituents of the crops as possible to the land. In making and selling butter, we may practically retain on the farm all of the fertilizing constituents utilized during the process; while in selling cheese we are removing some of those valuable materials—less rapidly, it is true, than in selling grain, but still amounting in value to about \$20.00 for each ton of cheese made, or, in other words, 10 cents for each 100 lbs. of milk manufactured into cheese. In contrasting the returns from butter and cheese, this great drain upon soil fertility is scarcely ever taken into consideration, while the increased feeding value of skim milk over whey is also rarely taken into account. The farmer of the future will pay more attention to the value of these by-products, and will not measure his returns entirely by the size of the check he gets from the factory or creamery.

The Cow's Own Testimony.

Patrick O'Sullivan, one of the average farmers of Ordinary township, went down to his barn lot the other morning to milk his one cow, which he considered a great milk-producing machine, and which would give an abundant flow until cold weather arrived, says *Farmer's Voice*. Then she didn't do so well, and Pat didn't know why. So he asked her, and this is what she said:

"I can secrete milk and yield it to you in normal quantities so long as I am comfortable, having clean quarters and decent water, as well as good bedding and protection from cold and rain and snow. You have supplied me with none of these, and the result is I cannot keep up my usual production of milk, no difference how much and what you feed me. This decrease in milk is no desire of my own; I don't begrudge you my milk; it makes no difference with me how much milk you get; I have no interest whatever in giving you a reduced yield for your feed. The point is simply this: I am a cow endowed with certain nature-given peculiarities, habits, characteristics; I am governed by these things which constitute me; I can't master them—they master me. The thing for you to do is to study them and then act as you think wise. If your efforts are not in vain you doubtless will see me turning out more goods. I can't help it. It's a way nature has. It's nothing to me. It's all with you. That's all."

And Pat said, "Begorra, that cow knows more than meself." And she did.

Ayrshires as Milkers.

Where quantity rather than quality of milk is the object to be aimed at it is very hard to beat an Ayrshire cow of a good milking strain. Though of comparatively small size, animals of this breed are remarkably deep milkers. Where a good price can be obtained for new milk, it is not considered an unusual result for a cow of this breed to give milk to the value of 10s. per week, or over £25 per annum. One of the great points in favor of Ayrshires is that they are comparatively hardy, and in addition to this, very thrifty cattle, and are consequently adapted for being kept on light lands which do not produce sufficiently good grass for carrying heavy stock such as Shorthorns and Red Polls. Like all deep milkers, however, Ayrshires are, of course, heavy feeders, and when cows of this breed are being specially kept for milking purposes they must be fed with unstinted liberality. As it is from the food that the milk is manufactured, it follows, as a matter of course, that in the absence of an abundance of food good milking results cannot be looked for.—*Farmer's Gazette*.

Dairying Up to Date--II.

BY GEORGE RICE.

WATERING COWS—VENTILATION—EXERCISE.

We might divide dairymen into three classes for illustration: Those who continue to winter their cows on straw, with hay in the spring, to keep them from the condition known as "lifting," and requiring a couple of months on grass to recuperate, by which time flies and heat are so bad that cows under these conditions cannot be expected to average above \$20 to \$25 at the factory, just about what their board bill would come to for the year under this sort of feeding. Another man will winter his cows somewhat better, feeding more hay, and thus adding to the cost. Still, as they are in the spring in better "heart," they are in shape to do better work. The food bill may be \$30 to \$35, and the return \$35 to \$40 per cow. But a strictly up-to-date dairyman makes a far better showing. He may feed his cows \$40 to \$45 worth of feed, and receive in return \$80 to \$85, and even more. That is a handsome return for the intelligence he uses.

It is of up-to-date dairying that we are writing, to get the greatest possible return. And to do so, it is best to have the cows calve in the fall. I consider July and August the very worst months to have cows calve, and October to December the best. But cows calving at this time need good care, and to be kept out of the cold. This is all-important, even of more importance than feed, because the feed is bound to be wasted if proper care is not taken. A cow calving in the fall, well cared for and watered, will give a large quantity of milk during the whole winter, and be in fine condition, so that when she strikes grass in the "balmy month of May," it is for all the world like retapping a tree in the sugar bush—it causes a fresh "run." I get more milk, and especially butter, from a cow having her fresh in the winter and on winter food. But I know of no way of increasing a cow's milk flow after she has been milking five or six months but to put her on good grass. The grass is so very stimulating that I have had cows run up in their milk flow 18 lbs. a day in a week or ten days, and that too from cows that have had the very best care and most succulent food throughout the whole winter. It is not likely that a cow that has not had such good care would show such an increase, as she would be poor and partially dry, and so not able to respond.

In the winter care of cows giving milk, I consider that water is of the first importance, and it is too often the most neglected, all because there is no general knowledge as to the vast amount of water a good dairy cow requires. Well, I have some figures and facts to give upon that point. And as an "eye-opener," I will say I have given a cow 200 lbs. (two hundred pounds) of water every day for a week, when she made 572 lbs. milk and 25.1 lbs. butter. This seems an astonishing amount of water. Well, take another case—a cow calving in December: I find in November this cow, being dry, would not drink over 40 to 50 lbs. of water daily, but when she drew near calving time she required more water, 75 to 100 lbs. daily. After calving she required 125 to 150 lbs. water daily. This is a cow of a 60-lbs.-milk-a-day capacity. It would be hard to give the exact amount any cow might require of water daily, but I find the amount of water required bears a close relation to the amount of milk given; and a cow four or five months in milk does not require as much water as she did when fresh. I want my cows to drink all the water I can induce them to, by giving them water often and not too cold, not below 50 degrees (60 or 70 degrees is better), and I don't want a cow to have over 30 lbs. water at any one time. By giving attention to the water supply, we get more milk when fresh, but it also greatly helps to keep up the milk flow. Again, too much water given at one time will make a cow scour. A friend was in my stable the other day, and complained of his cows scouring, and wanted to know what to feed them. On learning his way of watering, I was sure it was not the feed, but the way of watering, as his cows were watered three times a day, but sometimes they drank two and three pailfuls, and probably the next time very little, and it is just this seesaw watering that causes trouble and sets a cow scouring, when she is bound to soon shrink in her milk. Another peculiarity of cows is that they want water after feeding, even when fed on the most succulent food. And a knowledge of this trait means money to the owner, because if a cow does not get the water in sufficient quantity and at the right time, she does not do so well, cannot digest and assimilate her food.

Considering the amount of water a cow requires, and the time when she requires it, it is of course bad practice to water only twice a day at a large tank outside, as sometimes she may take too much and at other times not enough, and if, in addition to this, the water is ice cold, a cow will soon become "discouraged." Hence, I say, the first thing to do in commencing winter dairying is to put a little common sense into the cow's water supply.

Now, from the amount of water a cow drinks, not to mention the succulency of her food, and her otherhood, it should be unnecessary to say that a cow wants to be kept warm and comfortable, and this can only be done here in winter by keeping her in a warm, well-ventilated and well-lighted stable. (I shall probably describe an up-to-date stable later.)

There seems to be a general belief that a cow won't do well without exercise. Now, if you study

the cow and her habits, it will be found that a cow can't do well *with* exercise. She is not built that way—not for speed, nor yet is she a fur-bearing animal, but she wants to be kept quiet and contented, to chew her cud and "work over" her food. Now, to prove that a cow does not want exercise, just take her out after she has been fed the necessary feed to make a large quantity of milk, and I guarantee before the cow has walked a quarter of a mile she will puff and scour. But if I have a cow, just before calving, with a caked under, and inclined to be constipated on light feed, then, besides giving salts, etc., I take her for a walk of a mile or so; that moves the bowels and reduces the udder. I never milk before calving, rather exercise.

A cow to do well requires fresh air certainly, not only on fine days, but every day, and night too. In fact, I find that in testing cows, they do not do so well in murky weather as on bright, clear days. Now, to have fresh air at all times, we must either keep the cow out all the time, or else put her in a stable that is well ventilated.

We might as well try to hatch eggs without heat as to try to produce milk profitably without heat, and the only way to have the necessary heat is to have a warm stable, and it is just as easy and far more profitable to bring fresh air into a stable to the cows than to turn them out to get fresh air. It is a very easy matter to let fresh air in, and not very hard to get the foul air out without taking all the heat out. All that is required is a tight box for ventilation, extending from three or four feet from the floor, and thus three or four feet lower than the ceiling of the stable, so as not to take the heat out, and extending to the roof of the barn, the number and size depending upon number of animals. An up-to-date dairyman gets his big return from breeding and developing a good dairy (1st paper); giving her proper care, water, heat, etc. (2nd paper); feeding properly (3rd paper to follow).

Dairying in British Columbia.

In visiting British Columbia last fall, in the interests of dairying, I was somewhat surprised at the backward state of that industry in most of the sections which I visited. It is quite evident that there has been a lack of interest in this important branch of agriculture, except by the very few who have gone more or less extensively into it. As far as climatic and other conditions go, it is an almost ideal country for buttermaking. The summers are never excessively hot, the nights are always cool, thunder and lightning are almost unknown, pastures are luxuriant in nearly all the valleys, the water is good and the winters mild, and what is still more important, the demand is good and prices are high.

My first experience was on Vancouver Island, which for the greater part is mountainous and rocky, very similar to the mainland, and the arable land is found in patches and valleys of greater or less extent, but always surrounded by the everlasting hills. In a trip from Nanaimo, on the eastern shore of the Island, 56 miles by stage to Alberni, on the western slope of the Island, there is practically no farming land to be found until the Alberni valley is reached. This valley is quite extensive, but is heavily timbered, and the clearings are small; and although grass grows on the cultivated land in such luxuriance as is seldom seen, there is but little dairying, as the farms are so small that the few cows which are kept have to roam the woods for a living, and if they can be found twice a day to be milked, all well and good, but if not, they go unmilked. Many follow the practice of letting the calves suck the cows, but they are penned up at home, which is a sure way of bringing the cows home. The calf is first allowed to take a share and then tied up where the cow can fondle it, while the milker takes what the calf has left. This is practiced by many farmers, and the results in butter, we may be sure, are very meager indeed.

On my return to Nanaimo, I took steamer for Comox, which is situated about 150 miles from Victoria, up the Island. Here I found quite a large tract of fine farming land, and I found more dairying here than in any part which I visited. The President of the Farmers' Institute, Mr. McPhee, drove me several miles through a fine farming section, and I had the pleasure of forming the acquaintance of a very progressive and successful dairyman, Mr. Urquhart, of Courtney. Mr. Urquhart was at the time milking 37 fine pure-bred and grade Jerseys, and through his courtesy and kindness I was allowed to see his books, which showed that in ten months from January 1st, 1900, his cows had produced 12,100 pounds of butter, and he was confident that he would make at least 2,000 pounds more before the end of the year, making a total of at least 14,000 pounds for the year, from an average of 35 to 40 cows in milk. The price was down to 20 cents during the month of June only, then it rose to 25 cents, and at the time of my visit it was 30 cents, and Mr. Urquhart expected a further raise in a short time to 35 cents per pound f. o. b. at Comox, as his butter is nearly all shipped by steamer to Nanaimo. His books showed that the snug sum of \$2,000.35 had been received in cash from one merchant in Nanaimo for butter during the year 1899, besides his local trade. Mr. Urquhart farms 110 acres and raises all his feed, except an annual expenditure of \$200 for bran. He has also sold about \$800 worth of hogs during the year. Anyone who is in love with dairying ought to be satisfied with the conditions as they are to be found in that favored locality, for the climate is beautiful,

roses being in bloom nearly all the year 'round, grass grows very luxuriantly, and where clover gets a hold, it stays until it is rooted out, three or four tons of cured hay per acre being a not unusual crop. Corn is but little grown anywhere in British Columbia, but I found a few patches in this locality which had done fairly well. There is considerable enquiry about it everywhere among the farmers, and a great diversity of opinion as to its adaptability to the climate of British Columbia. I found one silo in the Comox district which was just being filled, or partially filled, with corn which had lain for weeks during the wet weather and which would not give either the owner or his cows a very favorable impression of the qualities of corn silage.

From Comox I returned to Victoria, and then, in company with the Deputy-Minister of Agriculture, who is also Superintendent of Farmers' Institutes, we went up the mainland about 300 miles to Kamloops and Salmon Arm, thence down the Okanagan valley, through Armstrong and Vernon, to Kelowna. The trip from Vernon to Kelowna by steamer, 30 miles, is a charming one. The beautiful Okanagan lake, 90 miles in length, deep, but narrow, is hemmed in on both sides by towering mountains between the points named, but on reaching Kelowna we soon saw evidences of being in one of the most fertile valleys of British Columbia. A rig being procured, we drove out several miles and had the pleasure of inspecting some of the tobacco-curing houses for which this valley is noted, as they claim to grow a superior quality of tobacco, which is all manufactured into cigars at Kelowna. Not being a user of the weed, I was not in a position to judge of the merits of the products of this industry, but I was told that they were equal to any grown in the tobacco districts of Pennsylvania, which, of course, I had to take for granted. Besides the tobacco, this valley is noted for its superior prunes and apples, and of the qualities of these I was able to form an opinion without having to take it second-hand. Their prunes are superior to anything I have ever seen elsewhere, and prune-raising is a profitable business, their best weighing from 40 to 50 to the pound, which sell wholesale at 8 cents per pound. Their apples are of immense size, but they are much coarser in the grain than are the apples of Ontario. Great crops of potatoes and timothy hay are grown here and shipped out to the mining towns, and although pasture without limit can be grown, yet dairying is one of the "infant" industries not yet able to walk alone. Farmers seem to think that these lands are too valuable to pasture cows upon, and the cattle are relegated to the mountains, but I will venture to say that not a farmer in the whole valley is making more off his acres than the gentleman I quoted in the Comox district. On our return to Vernon, we took a trip up the White valley, nearly 20 miles, and passed through the beautiful ranch belonging to Lord Aberdeen, which is a sight worth seeing, with its beautiful orchards and hop yards of about 200 acres in extent. The orchards comprise 115 acres, are eight years old, and last year produced about 300 tons of the largest and finest apples I ever saw anywhere. The ranch comprises about 11,000 acres, but much of it is mountainous and rocky, but the cultivated land is farmed to perfection. Irrigation is carried on quite extensively in part of this valley, and here, as elsewhere, great crops of timothy hay are grown, this being the staple crop at the upper end of the valley, which all has to go to Vernon for shipment. No dairying is to be found here, as the farmers seem to have got into a rut, and they are going to stay there for some time to come. Taking the situation as a whole, I think it would be hard to find a country in the world where a man would be as safe in pinning his faith to dairying as in British Columbia, for the conditions cannot be excelled, and prices are high and likely to rule high for years to come. Hog-raising and poultry-raising, which go hand in hand with dairying, are also exceedingly profitable, as there is a fine home market for both these products. Fresh eggs were worth anywhere from 25 to 40 cents per dozen when I was there. There is one drawback, however, to the poultry business in most localities, on account of the proximity of the mountains to the farming lands, which are always a refuge for wild animals which like a piece of toothsome chicken, and this will always be more or less of a menace to this industry in certain localities. J. STONEHOUSE.

Shorthorns as General Purpose Cattle.

As general-purpose cattle the Shorthorns are without a rival. Other breeds have their special points of merit, but for "all-round" excellence the Shorthorn stands alone. This is one of the secrets of the great popularity of the breed all over the world. With farmers and dairymen generally Shorthorns of a good milking strain are special favorites. Animals of this type are not only deep milkers, but when their period of lactation comes to an end and their milk supply falls off, they possess such a well-developed aptitude for laying on flesh that but little difficulty is experienced in getting them into suitable condition for being sold as beef. There are many who hold that it is a mistake to aim at getting the two qualifications of milk and beef production in the same animal, but the experiences of some of our best dairymen do not go to support this contention. So long as the milking properties of the Shorthorn are properly cultivated, so long will the breed hold its own as the best general-purpose breed in existence.—*Agricultural Gazette.*

Scotch Woman's Way of Feeding Calves.

In the dairy department of the *Scottish Farmer* a very practical article, written by a lady, we take it, from the signature, appears, from which we take extracts, omitting the rather able and interesting introduction treating of the composition of milk and its value as a food.

"Let us now suppose you have got the calves, and they must be fed. When the youngster is born it must have milk, and that milk must be its mother's own first milk, unless she is in such a state of health that it is not wise to give it. Some few farmers even now do not always give this milk to the calves; but, as it acts medicinally on them, they ought to have it. If they cannot, give them a moderate dose of castor oil; but the milk is by far the best thing for them. Do not, on any account, leave the calf all night without milk, because it happens to come into the world at an inconvenient hour; if you do you will most likely have considerable difficulty in getting it even to suck. It may be days before it can be got to take food properly at all, and such a check at this time will probably throw the calf permanently backward in its growth. Feed your calf as soon as it begins to look about it and attempts to rise. It is assumed that in all dairies the calf is removed some distance from its mother as soon as it is born. It is best not to let her see it at all if it is not to remain with her, or she will probably fret after it. If she frets, the milk supply and her health may suffer, and we must, in all our dealings with our dumb servants, be as humane as circumstances will permit. Calves are not generally fed as often as they should be. They will usually do better and be less likely to scour if they are fed often and in small quantities, beginning with about $\frac{1}{2}$ of a gallon, or a little less, divided into at least three, and, better, four meals a day for the first few days. Three meals a day should be kept up for a fortnight at least; better a month, or even longer, though, if hands are short and work heavy, the number of meals may be reduced to two after the first week or so. The quantity of milk should be increased till when the calf is five or six weeks old it should be getting two gallons a day; after that the increase may be slower, up to $2\frac{1}{2}$ gallons at three months. If the calves are well grown and strong, a change may be made in their diet when they are a fortnight old; if they are small or have received a check, they must have their mother's milk, or that of another recently-calved cow, for a month or six weeks.

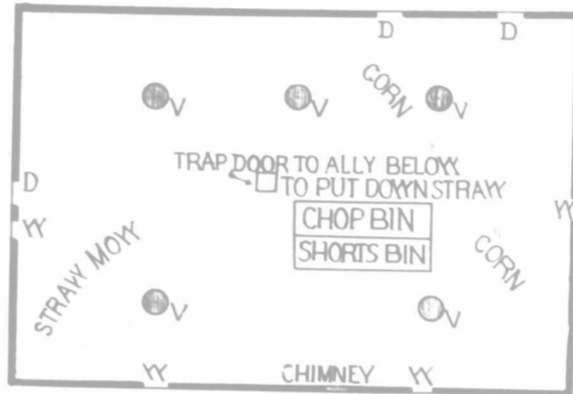
"We will suppose now the calves are ready for the change in diet, from a fortnight to a month old or older. If they are ready at two weeks old they have really had very little milk, as the mother's milk is not fit to use for churning for at least a week, or for cheesemaking for ten days after calving. What the change will be will depend on what you have to give them; let us say you are separating or skimming your milk and have plenty of skim or separated milk. Separated milk is preferable, as it is available for use while quite sweet; skim milk is apt to be turned sour before it is creamed in warm weather. In separating or skimming you remove the fat and that only from the milk; therefore, to make suitable food, that fat must be replaced by some other easily-digested fat. Cod-liver oil does very well. Well-scalded linseed meal does well, or even well-made porridge. It requires, however, a good deal of skill and care to use these properly. For this reason you cannot do better than use one of the calf foods made for the purpose by those who have studied the question thoroughly and have means to get and prepare the best and most easily digested mixtures. There are several of these on the market, one of the best known of them is Bibby's Cream Equivalent. Whichever of them you choose, be sure to follow the instructions given with it carefully and exactly or you cannot expect success. Many farmers are extremely careless on this point. Having prepared the food according to instructions, mix a little—not more than say a tablespoonful—into about one pint of separated milk for each calf. Make this up to the usual quantity with whole milk and give at blood heat—about 90 degrees Fahr. The temperature should be taken with a thermometer, as it is important that it should be nearly correct. From this gradually increase the quantities of separated milk and calf food, and decrease the whole milk, till in a week's time you are giving no whole milk. The quantity of calf food will depend on what food you are using, and you must work according to instructions. If you are using linseed meal, increase it up to one pound per day when the calf is two months old. Of course, every feeder knows that different animals require different amounts of food. Some will safely take more than this; others will be better with less. The animal's condition must, therefore, be carefully noted, and the feeding regulated accordingly. If you are churning whole milk, and thus have no separated milk, buttermilk, if not too sour, will do very well. Used as above described, many good calves are reared in this way.

"The change being thus gradually made, the calves receive no check, and they take quite kindly to the buttermilk. Sweet scalded whey may be used where it is the only available thing, but as it is deficient both in fat and nitrogen, it is not a good food, and, unless used with one of the calf foods meant to supply more than merely the cream, or with well-scalded oatmeal porridge. The calves

may be weaned at about 2 to 3 months old, if necessary, but it is best to give them their drink longer. Indeed, where there is plenty of separated or butter milk, let them have it up to six or even eight months old, if they will take it, but they will generally refuse it when they get to grass. Give them a bunch of sweet hay to nibble at when they are a few days old; some calves start to nibble very young. When they are eating freely they may have a little linseed or Bibby cake. This, however, is not really necessary if you do not want to force them in any way, though they will well repay you for it. Do not put them out at all till they are about six weeks to two months old, and in districts where 'hoose' is common they are better not out at all the first summer."—*Florence E. Sexton.*

A Model Hogpen.

SIR.—Having seen some plans of hogpens in late issues of the *ADVOCATE*, I thought I would send you one of my pen, built in 1899 on a concrete foundation, 50 ft. long by 32 wide, and about 16 ft. from ground to eaves. The concrete is about 3 ft. above ground, 8 ins. thick, set on a 16-in. base in the ground. It was put up under the supervision of Mr. Hagar, with Battle's Thorold cement. Troughs and floors are of the same material, with a 1-ft. by 5-in. wall between each pen, on which the partitions rest, with slide doors between eight of the pens. The partition next the boiler is concrete, 3 ft. high, 5 ins. thick. The floors slope from troughs back to one corner of each pen. The wet is soaked up by litter of straw and sawdust. The troughs are made in two different shaped moulds, about 12x14 ins.



LOFT OR UPPER FLOOR OF MR. ED. V. DECKER'S PIGGERY.

wide, and from 5 to 6 ins. deep. It took sixty barrels of cement, mixed with lake gravel and stone, for the whole foundation and floors. On the concrete walls are good hewed sills, with a good strong hewed frame on them. Above the concrete wall to the loft floor is double boarded, with tar paper in between. The outside siding is planed pine, with the cracks all battened, and painted with two coats of oil and oxide of iron. There are eight windows in all, with six 10x14 lights in each window, six downstairs and four upstairs. The end ones upstairs are in the gable ends, and are never opened. The pens are about 8 ft. high in the clear, and the measurements are from outside of wall to center of partitions. Each pen will hold from fourteen small to eight or nine pigs fit for market. The two doors at the ends of alley and the one on south side are 4 ft. wide by 7 ft. high, so that one can take a horse and stone boat through, if so desired, to clean out pens, but I always clean out through windows and hog doors about once a week. The hog doors only come up to the sill, and the windows are above the sill. I have five ventilators, made of 8-in. galvanized iron pipe, which extend from pen ceilings out



GROUND FLOOR OF PIGGERY BELONGING TO MR. ED. V. DECKER, ELGIN CO., ONT.

through the roof. They are marked V in plan. Doors are marked D, windows W, troughs T. The two doors on north side of left plan are for throwing corn in, and the one on west end for putting in straw. My roots I keep in barn cellars about 200 ft. from pen, and I do not find it very much trouble to bring a basketful down night and morning when coming to the house. Then one pulper answers for both cattle and hogs; but if one desired he could use one pen for roots, as it very seldom freezes in my pen. My pen is built on the level ground, for I do not think that many farms would supply a bank like Mr. Gier speaks of, especially around here. I consider concrete better than stone or brick, for I think it is cheaper, drier, and hogs will not gnaw it as much. The

grain is let down from bins in loft by chutes into mixing tank. As to cost, that will vary very much. My piggery cost about \$300, besides my own labor, and I got all the rough lumber and timber and stone on my own farm, and the gravel on the lake beach. The fronts of pens are on hinges, so when I want to move pigs from pen to pen, I just swing them up and run the pigs along the alley, which is 4 ft. wide, and plenty wide enough.

Ed. V. Decker.

The Turkey and its Management.

The raising of the turkey for marketing and exportation purposes, both dead and alive, is now becoming an important branch in the trade of this country, and is, I think, deserving of some notice.

First, the breeds, feeding and care of the breeding stock; next, the raising and care of the young. There are several standard breeds of turkeys, the Bronze, the White Holland, the Narragansett, the Black, the Buff, and the Slate. The first two varieties are the best known. Turkeys differ from other classes of poultry in many ways. The domestic turkey is but few removes from its wild ancestors, and much of that wildness still remains. They cannot be confined profitably, and the larger the flock the greater the disposition to roam. I have found them so at least.

I now come to the feeding and care of the breeding stock. The first thing to do is the selection of the stock. The breeding stock one starts with should be large, strong, and not related. Do not try to economize on the price of the first stock bought, for their offspring will grow up like them. Be very careful to guard against overfeeding the breeding stock. It is very important to keep the turkey in a healthy and vigorous condition. There is considerable loss occasioned each year by having the breeding stock diseased and not fit for breeding purposes. Most of this is brought about by overfeeding. What the breeding stock need is the bone and muscle rather than fat, and they should be fed with this object in view, being supplied with good, strengthening food, which will aid in forming a large, strong frame. In cases where this is neglected, and the turkeys are allowed to become very fat at the breeding time, the eggs laid are small and not always properly fertilized. If hatched at all, the chicks will not be strong and healthy. For new blood, it is well to procure from a distance. In procuring a gobbler, aim to secure one that is strong and vigorous. It is better to use turkey hens two years old than to depend on pullets. The hen likes a secluded spot for her nest, so those who are in this line should prepare a place where she can slyly make her nest and deposit her eggs unknown. It is their nature to nest on the ground, and the eggs hatch better if exposed to the earth's moisture. Place old barrels on their sides, put hay and leaves carelessly inside for them to lay on, and when the time arrives she will make her nest, and in such a way that the eggs will not get chilled. It not infrequently happens that the hen will not take to the nest prepared for her. She will likely seek a nest in the woods, if it is near by. It is dangerous to move the nest once the hen has started setting, as she is liable to leave it.

I now come to the raising and care of the young. The young chicks should not be disturbed for 24 hours after making their appearance. After that time they will be quite strong and hungry. I then remove them to a clean, airy, roomy coop, and give them their first meal, which is of boiled hen's eggs. Stale wheat bread and crumbs, just moistened with milk, can be given afterwards. This feed should be continued for two weeks, occasionally giving them curd. Make the food sweet and wholesome. All food must be cooked until they have thrown out the red on their heads. Feed them five or six times a day, just enough so they will eat it all up. Whole wheat boiled to bursting makes one of the best foods for young turkeys. They should also be given a little green food and gravel or other grit. After they are three months old they may be given cracked grain, wheat, corn, and such like, but no whole grain until they are five or six months old. The coops must be kept dry and clean and the young turkeys kept out of the dew and rain until they are full feathered. Dampness and filth will kill them as sure as a dose of poison. Many lose their turkeys by keeping them too closely confined. They must have a good range in order to become strong and active. Do not keep them shut up after the dew is off, except on rainy days. One thing you should always do is to encourage the mother to return early with her brood. This can be accomplished by feeding them at six o'clock every evening. A turkey looks upon home as a place to get something to eat. If they are not encouraged to come home early, the young become sleepy and often get lost or destroyed. Another essential point is to keep them clear of lice. Their worst enemy is the gray louse. Look for these in the feathers of the head and under the throat close to the skin. When these are found, dust the mother and her brood well with good fresh insect powder and rub one or two drops of sweet oil well into the feathers of the head and neck. Do not use more than two or three drops of grease, for it is a dangerous article to use on young poultry of all kinds, as I have found out by experience.

I think the Bronze turkey is certainly the market bird. They are quick growers, excellent for table use, and immense in size. They will bring the same price per pound in the market as other breeds, and in a flock of, say, twenty-four you will

get from twenty-five to seventy-five pounds more in weight from the same age and feed as from any twenty-five turkeys of any other variety.

I write this to give the farmers' wives an opportunity of knowing how they can make from five to fifty dollars more a year than they can do by breeding scrub or badly inbred stock of any variety.
FARMER'S WIFE.

Dairying in Northern Alberta.

The greatest number of cows I have milked for the creamery is 13, and my two daughters did the work. I have a lot of young heifers, but the Edmonton creamery gets such poor support that I am doubtful if it is worth the trouble to raise a milking herd, as I am afraid it will be shut up. Nobody here would think of hiring help for milking, but my own idea has been that a boy would look after 12 cows. Given a handy supply of water, the collecting of cream depends on what arrangements farmers in a certain locality will make with each other. If six men living near each other will arrange to collect the cream in turns, the hauling once a week is a mere nothing.

I use a Laval hand separator, and consider six cows enough to justify a man in buying one. Ice ought to be put up by every one, and any cheap building with a good roof will do. Sawdust should be used for packing; I don't believe in straw. The cream may be kept slung down a deep well if there is no ice house provided. With ice also, very good results can be got from deep setting in creamers, without the use of a separator.

I am afraid nothing will persuade patrons to stick to the creamery all along except experience that this will pay them best. If the Government will keep the thing going for a while, confidence will arise, and the knowledge that fair prices and regular payments are made will have a great effect. In this district there has been so much disappointment with creamery work, that confidence has been shaken, and those who have customers, and who live near enough to the market, want to be sure that they won't risk anything by joining the creamery. With fair prices and regular settlements, people will take trouble to extend the milking season. I am glad you are doing what you can in clearing up the difficulties which beset this question.
FRED. S. MITCHELL.
Northern Alberta.

A Good Milking Shorthorn.

Mr. H. B. Murray, Antrim Co., Ireland, in the *Farmer's Gazette* gives the following milk record of a pure-bred Shorthorn cow, now ten years old:—
"On the 1st of July, 1890, she gave birth to twin heifer calves, which were reared in the usual way—new milk for six weeks, then gradually brought on to skim milk, with meal, etc. They would now readily sell for £10 each. From the date mentioned till July 1st, 1900, the cow yielded 11,752 lbs., or 1,175 gallons, of milk, and she continued in the dairy till August 12th, giving a further 420 lbs. of milk. Her highest yield in the day was 51 lbs. On the 4th of October, 1900, she produced a heifer calf (her eighth calf); since then she has been milking nearly as well, though her highest daily yield has been 48 lbs. In the 13 weeks she has given nearly 4,000 lbs."

QUESTIONS AND ANSWERS.

Veterinary.

ECZEMA IN STEER.

T. S., Elgin Co., Ont.:—"I have a yearling steer that is very bad all over the body with a very rough and scabby skin. You can pull the hair off in chunks, but no blood appears on the skin. It rubs itself very much. It feeds well and is doing well. I cannot find any lice. Will you kindly let me know through the Veterinary column of the *ADVOCATE* how to treat the same?"

[Give the steer a purgative of about one pound Epsom salts dissolved in a quart of warm water. Wash the body thoroughly with warm soap suds. Keep in a warm stall after washing. Then apply daily either McDougall's Sheep Dip, as directed on the package for such purposes, or the following lotion: Creolin, 1 part; water, 60 parts. Feed lightly, and give purgative when necessary.
J. H. REED, V. S.]

CAKED UDDER.

P., Grand Forks, N. D.:—"What can be done for a cow when a part of her bag has been allowed to cake so milk cannot be drawn from that portion. The passage in the teat is open, and a small quantity of watery fluid can be drawn after kneading the bag for a time. The bag was caked a year ago. The cow has a calf again, and there is milk in that portion of the bag, but I cannot draw it."

[An answer to the above will be found on page 88, February 5th, 1901, issue.]

REMOVING THE PLACENTA.

A Brandon subscriber recommends the following as an effectual remedy for the above trouble in cows: I gave the cow two large salt herrings on the sixth day after calving, gave two more on the following day. She cleaned soon after the last dose. I might also say she came in season two weeks after cleansing, and dropped her next calf without any after-trouble, about three weeks ago. I have great faith in it, from personal experience.
J. J. WHITE.

PILES IN PIGS.

J. R. S., West Saskatoon, Sask.:—"I have a pig, 3 months old, reluctant to take its feed. On examination, the bowels were found to be swollen and inflamed, protruding from the rectum. Death followed in a few hours. The pig had been fed on house slops, pure water and finely-ground elevator cleanings once daily, with barley and oats, unground, mixed, as balance of ration. Later, a valuable sow showed similar symptoms. Two days after noticing her I found bowel protruding as large as a man's fist. She has been fed, since weaning her pigs, on wheat screenings, wild buckwheat, and lamb's-quarter seeds. After loss of the first pig I changed the feed, by boiling the seeds. I am giving the sow only slop feed now, of ground oats and barley. I gave saltpetre and sulphur, and applied sweet oil and Pain Killer to the parts."

[The cases described by you are due to the diet, which has probably been of too constipating nature. Would recommend 4 ounces of raw linseed oil, to be mixed with sweet milk, which the sow will drink. Give, if possible, a more laxative diet. Use roots freely. The parts may be bathed once daily with a lotion of laudanum, 1 ounce; sulphate of zinc, 2 drams; water, 1 quart. Give plenty of exercise, and turn to the straw pile.]

WARTS ON UDDER AND TEATS.

W. R. A., Dundas Co., Ont.:—"I would like to have you give through the *ADVOCATE* a cure for warts on cattle, as I have a heifer coming two years that has some large lumps that look like warts that seem to be full of blood, with some smaller ones on the udder and teats, which, if not cured or removed, will prevent milking?"

[Such warts as have constricted necks can be clipped off with a pair of scissors, and the raw surface thus made dressed with a little butter of antimony applied with a feather once daily for three applications, after which a little carbolic oil—1 part carbolic acid to 50 parts sweet oil—can be used as a dressing twice daily until the parts heal. For those that have broad bases use butter of antimony applied as above every day. This corrodes the surface of the growth, and occasionally you will be able to pick a scab or scale off, which gives the dressing a better chance to act. This is a slow method of removing warts, but when the knife or shears cannot be used it is the best.
J. H. REED, V. S.]

CEREBRO SPINAL MENINGITIS IN HORSES.

R. M., Huron Co., Ont.:—"My horses lost the power of swallowing. Apparently they were in no pain. They laid down considerably for about 12 hours, then lost the use of hind legs, and in 12 hours died. One day after, a 2-year-old took the same disease, but lived for four days and then died. I had three more in the same stable. Two young horses I removed to another stable; the other one, an aged horse, I left in the same stable. It is about three weeks since the first two died, the other three apparently being all right. Would an ill-ventilated stable cause it? I fed hay and cut straw, with a little ensilage and a gallon of chopped oats twice a day, and a cupful of turnips at night, to each horse. I turned them out twice a day. What do you suppose caused it? Would there be any cure?"

[Your horses died from a disease called cerebro-spinal meningitis. It is caused by poor ventilation, especially if the surroundings be damp; water in which there is decaying animal or vegetable matter, especially water into which liquid manure may enter; food of poor quality; decaying cornstalks, etc., etc. Silage of poor quality might cause it. In this disease, the first symptom generally noticed is an inability to swallow. Paralysis of the limbs usually follow in a variable time, and death is the usual result, although a recovery sometimes takes place. The form usually seen in horses is not generally considered contagious, but what causes it in one animal may cause it in others under similar conditions. It is a disease that requires professional treatment early, as each case requires treatment according to the peculiar symptoms presented. I would advise you to have a veterinarian investigate your premises, water and food, and ascertain, if possible, the cause of the outbreak. Unless you get at the cause and remove it, you will be liable to another outbreak at any time.
J. H. REED, V. S.]

ABORTION IN HEIFER.

J. W. N., Westminster, B. C.:—"A 2-year-old heifer, coming due to calve in the spring, about a month ago commenced to make bag, and the last three days the udder-grew more than it had altogether and had half a gallon of milk, and she had a calf, alive, with no hair on it and not more than one-third grown. She seems all right and is milking nicely. The mystery with me is, why she would make bag and have milk at that time of pregnancy?"

[Abortion is caused in many ways. It is probable in the case of your heifer it was from an accident, as a fall, slip, blow, or something of that sort. It is also not unusual in such cases for the lacteal apparatus to become active. The disjunction between the foetal membranes and the maternal mucous membrane is frequently accompanied or followed by activity of the said apparatus. It is also probable the heifer will continue to yield milk in nearly as large quantities as though gestation had continued to the normal period.
J. H. REED, V. S.]

SKIN IRRITATION IN HORSES.

G. C., Simcoe Co., Ont.:—"Some of my horses are troubled with an irritation in all their legs. They are continuously biting and scratching them. They pound their hind feet on the stable floor and rub their tails against the fence or any obstacle they can get to. They have been troubled this way for about a year, sometimes worse than others. In winter they run idle and are fed in the following way: Morning feed consists of a small feed of well-saved hay (timothy and clover mixed), a pailful of cut oat straw, three pounds of oats and one pound of bran, with a small pinch of salt, all mixed together. After breakfast, if the day is fit, they are allowed a couple of hours out for exercise. At noon they are fed much the same as morning. After noon they are again allowed exercise. In the evening they are again fed the cut straw, oats and bran, and last thing at night they get a feed of pulped turnips, a small bite of hay and clean wheat chaff to pick at during the night. Care is taken that all the feed they get is pure and free from must. I also feed them some salts and sulphur. They are allowed all the pure well water they wish to take. In summer, when working, they run out on pasture at night, and during daytime are fed liberally on well-cured cut hay mixed with oats and bran, all the uncut hay they wish to eat, and green cut corn when it is in season. Their stable is stone basement, well above ground and well ventilated, plank floor. Our hens have free access to the horse stable in daytime, but we cannot find any hen lice on the horses, and they are fat and sleek the whole year round. My neighbors' horses are also troubled with this same irritation in their legs. Some of them stock up, become scurfy, and the hair becomes loose and will rub off. We bathe their legs with tobacco juice, which gives relief for a few days. Can you tell what the trouble is and how to effect a cure?"

[Some horses, especially those that are known as beefy limbed, with considerable hair, especially of a coarse character, are predisposed to such conditions as you describe, and many horses are affected with an itchiness about the roots of their tails. I would advise the following treatment: Feed nothing but a little bran for about 18 hours, then give each horse a purgative of from 6 to 10 drs. Barbadoes aloes (according to his size) and 2 drs. ginger, made into a bolus with a little treacle or soap, or else shaken with a pint of cold water and given as a drench. Give chilled water in small quantities and nothing but bran to eat until purgation commences. Then feed hay and small quantities of grain, unless the horses be working, when you will require to feed grain according to the work they are required to do. After the bowels have regained their normal condition, give the following powders: nitrate of potash, 3 ozs.; sulphur, 6 ozs.; arsenious acid, 4 drs. Mix and make into 24 powders, and give a powder every night and morning in damp food. If he will not eat the powders, they must be given either in the form of a bolus or as a drench mixed with a little water. Keep up the administration of the powders for at least two weeks, longer if necessary. Wash the affected parts thoroughly with strong, warm soft-soap suds, in order to remove all dirt, scurf, etc., and then rub well into the parts twice daily the following lotion: bichloride of mercury, one part; soft water, 500 parts. If there be much long hair on the legs, it will be difficult to get the lotion onto the skin, but it must be done, or little good will result, and it is unsafe to clip the legs at this season. Apply the lotion to the tail too.
J. H. REED, V. S.]

SWELLING OF LEGS, WITH INCIPIENT DIARRHEA.

FARMER, Essex Co., Ont.:—"A horse nine years old, when standing in the stable for a couple of days his hind legs swell and his bowels act too freely, and he is not doing well for the feed he is getting. He feeds well on good hay and oats three times a day. If he is out every day, he seems to be all right. What treatment would you advise? Please tell me what can be done, in next issue of *FARMER'S ADVOCATE*."

[It is probable your horse does not properly masticate his food, which would account for the diarrhoea, or it may be there is some foreign body in the intestine, which also would account for it. Have his teeth examined and if necessary dressed. Give him nothing to eat for 12 hours except a little bran, then give a purgative of say 8 drs. aloes, 2 drs. ginger, either as a ball or mixed with a pint of cold water as a drench. Feed nothing but bran until purgation commences, then feed good hay and a little grain. Give, after purgation ceases, the following: Nitrate of potash, 4 ozs.; bicarbonate of soda, 6 ozs.; ginger, 4 ozs.; arsenious acid, 4 drs. Mix and make into 24 powders, and give one every night and morning in damp food. Repeat the prescription if necessary. J. H. REED, V. S.]

DEFECTIVE BULL.

E. C., Ontario Co., Ont.:—"Please inform me if a bull with one testicle will prove favorable as a stock-getter?"

[As a rule, a bull showing but one testicle will prove a reasonably good stock-getter, but will be liable to leave some of his sons similarly deficient, though this does not always follow. Some leave none defective, others a small proportion.]

TUMOR IN HORSE'S NECK.

Z. Y. N., Vernon, B. C.:—"Ten-year-old horse. For the last eighteen months or so has had a hard lump (varying in size at different times from a bean to a hen's egg) in the muscles of the neck just inside the point of shoulder, and a couple of inches higher up. It is very painful on pressure, and of late keeps him a little lame. He has done no work this winter. Have blistered it, but that does not appear to do it any good. What treatment would you recommend?"

[The growth described is a tumor, and blistering will not remove it. It requires a surgical operation. The growth must be dissected out. It is possible a small amount of pus may be found in it. From your description, I cannot make out exactly the location of the growth, but if not quite close to the jugular vein, any man who is handy with a knife can safely operate. If close to vein, great care will need to be exercised to avoid wounding the blood vessel. After the operation, treat as an ordinary wound. Use some good antiseptic—none better than carbolic acid one part, water sixty parts. J. H. REED, V. S.]

MAMMITS OR GARGET IN COW.

J. C., Peel Co., Ont.:—"I have a cow that has one quarter of her udder very much swollen and inflamed. The first I noticed wrong was just after milking. She was trembling as though she were cold. On examining her, I found her udder as stated above, with the veins of that quarter standing out like whipcords, and very sore. She has been milking about three months. Am feeding ensilage with cut straw, gallon of chop (peas and oats, equal parts by weight), one-half gallon of bran and one-half pail mangels night and morning. Cows are watered twice a day in stable, turned out only on very fine days for a short time. Had another cow affected the same way about a month ago. She is better, but gives no milk from the affected quarter. Please let me know the cause and cure."

[The trouble is mammitis (inflammation of the udder), often occurring after calving, generally with good milkers. Cold drafts are frequent causes of this trouble. The treatment should be prompt and energetic, in order to save the udder from permanent injury. Give a purgative of two pounds of Epsom salts with half an ounce of ginger, dissolved in warm water. Bathe the udder twice daily for thirty or forty minutes with warm water in which the hand can be borne. Rub dry and apply belladonna ointment or goose oil, well rubbed in. Continue giving nitrate of potash in teaspoonful doses twice a day in feed if she will take it, or in a drench. Reduce the grain diet to a simple warm bran mash. Milk out the quarter frequently. Keep the cow warm and away from drafts, and take the chill off all the water she drinks.]

DISCHARGE FROM NOSTRILS IN FAST PACING FILLY.

R. W. C., Grey Co., Ont.:—"Perhaps I am intruding on your good nature by asking so many favors, thanking you for your kind reply to my last letter. I have one of the best bred and promising pacing fillies in the country. I would like a little advice from you. I feed 3 pints of oats, 1 pint of bran, tablespoonful of salt three times a day, and hay. I boil 2 pint oats, 1 pint wheat, 1 cup flax two to three times a week; in this I put 1 teaspoonful of the mixture: Sulphate of iron, $\frac{1}{2}$ lb.; sulphate of soda, $\frac{1}{2}$ lb.; gentian root, $\frac{1}{2}$ lb. How does this act on the wind? She has a little white discharge from the nostril, no cough; has two wolf teeth, and the lampr. She is rising four years; good natural pacer; requires no hobbles. What would be good for her wind, and that discharge?"

[Little fault can be found with your manner of feeding, except that I don't consider it wise to force a colt to eat 3 tablespoonfuls of salt daily. Horses require a certain amount of salt, but it is generally considered better to have a lump of rock salt in the feed box, where they can have access to it at all times, than to force them to take given quantities in each feed. If rock salt be not on hand, common salt can be kept in a separate box. I also consider that for fast work you probably give too much bran. I prefer feeding oats by themselves, and giving a soft feed about twice weekly; giving a limited amount of good timothy hay night and morning, no hay at noon. The boiled feed you mention is very good, but I would give only half the quantity of wheat and add a little bran. I do not understand why you give the powders you mention. The prescription is a very good tonic, but evidently she requires no toning, and it is not good practice to give a horse drugs unless he needs them, therefore I would discontinue giving the powders. You do not state how long she has had the discharge from the nostrils, but I presume it has become chronic. The food you have been giving would have no injurious effect upon her wind, unless you subjected her to fast work shortly after a meal, when the stomach is full. For the discharge I would recommend the following: Sulphate of copper, 3 ozs.; arsenious acid, 2 drs.; digitalis, 1 oz. Mix and make into 24 powders. Feed a powder every night and morning in dampened oats. If necessary repeat the prescription. It is probable the wolf teeth do not do any harm, but they are superfluous and should not be there, and should be extracted. Do not knock the crowns off, leaving the fangs there; have them drawn. J. H. REED, V. S.]

BLEMISH ON COLT'S FOOT.

J. A. K., Middlesex Co., Ont.:—"I have a two-year-old colt that had his foot cut on a disk harrow about four months ago. The cut is on hind foot, about two inches above hoof. When cut, a piece of skin about the size of a silver dollar was left hanging, and which I got removed. The cut took about three months to heal, and left a callous and has not haired. I tried to blister, but it has not taken effect. Can I remove this blemish, and how?"

[The scar cannot be removed, because the hair roots have been destroyed and cannot again be made to grow. If there exists a high callous lump, it can be burned down partially with acids by a veterinary surgeon.]

Miscellaneous.

WANTED PRIDE OF THE NORTH POTATOES.

S., High Bluff:—"I wish to know, through your valuable paper, if I can purchase from some of your numerous readers a small quantity of the Rose of the North potatoes?"

1899 WHEAT FOR SEED.

A. B. C., East Assa:—"Through being hailed out last fall, I have not enough of last year's wheat for seed, but have some 'I hard' from previous year to make up balance. Some of my neighbors say that it will not make as good seed as wheat of last year's crop. Now, the question is whether to sow this wheat or sell it and buy wheat of last year which may have been weakened through exposure to weather? I remember seeing crops in the spring of 1892 which, though sprouted all right, were killed off by a spell of cold weather, and I am looking for more such crops this year if some sow the wheat they talk of. It appears to me that seed may look all right and start to grow, but may be weakened so that it must have favorable weather to make a crop."

[If your '99 wheat is still I hard—that is, if it has been kept dry and sound—by all means use it in preference to a poor sample of 1900 wheat. As A. B. C. says, there is great danger in using damaged grain for seed, and, before doing so, any sane man will make careful tests of the germinating power of such seed. This may be done easily by counting out 100 average grains and placing them in a piece of flannel, moistened, and placed near the stove, when a few days will reveal the percentage of grain that will germinate. The Ottawa Experimental Farm makes official tests of any seeds sent to them, without charge. In this connection, however, it is worth while remembering that in the case of grain that is soft or damp, while it may show a satisfactory germination test during the winter months, there is some danger of such grain heating in the bins, if care is not taken to provide against such a contingency, before the time comes for seeding. At best it is risky to use inferior seed of any kind if it is possible to procure good sound seed. The difference in cost between good seed and doubtful is so small that it seems short-sighted policy to run any risks. Some of the provincial seedsmen are offering sound, clean '99 wheat for seed at reasonable prices.]

WELLS AND MAPLE SEED.

A NEW SUBSCRIBER, Elkhorn, Man.:—"After reading your leader *re* The Farm Water Supply, in the Sept. 20th issue, would be pleased if you would answer me the following questions in your next issue:

"1. Are bored wells reliable for watering thirty or forty head of stock, as we have been unsuccessful with dug wells?"

"2. What means would be best to procure the Government borers, as we are unable to get a private one anywhere in this neighborhood?"

"3. What would be the best position for same to be worked by windmill from the barn, to supply house and barn, they being about 150 feet apart?"

"4. Do the Experimental Farms distribute seed of the Manitoba maple; if so, which one should I write to for it?"

[1. Speaking generally, water in a well comes from one of two sources—from soakage or from underground springs. When soakage only or a very weak spring has to be depended upon, a dug well is sometimes necessary in order to store sufficient supply, but frequently inexhaustible supplies are obtained in small drilled wells only three or five inches in diameter. The small drilled well cased in iron piping is certainly the best kind of a well, because all impurities and surface soakage are excluded, but such supply may not be available in your district, and you will have to be guided by your local conditions.]

2. Apply to your representative in the Local Legislature or to the Minister of Public Works.]

3. This would depend upon the location. In some places water is more readily found on the highest ground, and in others on the lowest. Without going into all the details, it would be impossible to advise as to best location.]

4. Yes, while their supply lasts they do. As you are in Manitoba, write to the Manitoba Experimental Farm, at Brandon.]

APPENDIX AYRSHIRES.

J. W., Frontenac Co., Ont.:—"I have for a number of years been breeding Ayrshire cattle, each in its turn been duly pedigreed and registered. I recently sent two of those pedigrees to be regis-

tered, one being duly recorded, the other has returned to me in the same state I sent it, the secretary stating he cannot record it, as it runs into what is called the appendix of the herdbook, which has been done away with. Is none of the stock recorded in this part of the book to be classed as pure or fit for registration any longer? If not, kindly state why?"

[At the annual meeting of the Dominion Ayrshire Breeders' Association at Toronto, February 10th, 1888, it was resolved to discontinue the registration of animals in the appendix of the herdbook. On the occasion of the amalgamation of the Dominion and the Canadian Ayrshire Breeders' Associations, consummated in the same year, as we understand it, the pedigrees in the appendix of the Dominion book which do not trace in all lines to known imported ancestry were discarded and declared ineligible to the herdbook under the new order of things. It is possible and probable that most of the animals in the appendix were pure-bred and good cattle, but the fact of their being placed in the appendix, and not in the body of the herdbook, implied the lack of sufficient evidence of their descent from imported pure-bred stock to justify their being admitted to the book proper.]

BITTER CREAM.

SCRIBBLER, Simcoe Co., Ont.:—"Please explain through your columns why cream becomes bitter after standing until the third or fourth milking, the milk being only slightly sour, and set in shallow tins nearly new, in a cool, well-aired pantry? The cows are fed nothing that would taint the milk except Graystone turnips."

[Bitter milk is due to a number of different causes, such as the nature of the feeding stuff used, but it is most probably due to bacterial life. If the bitter taste is present immediately after milking, and does not increase as the milk is kept, the food is the cause of the trouble; but if the bitterness increases with time, then it is due to micro-organisms. Cows long calved occasionally give milk quite bitter, and when this is the case, about the only means of meeting the trouble is to allow her to dry off. It would be well to change the cows' food somewhat, decreasing the turnips fed and giving liberal quantities of bran slop with good hay. Also scald all vessels thoroughly in which the milk is contained. If these fail, then dry the guilty cow.]

TO RID LAMBS OF TICKS.

J. A. D., Algoma Dist.:—"I find some ticks on my last year's lambs: what would you advise me to do to rid them of them?"

[If one has a sheep pen that can be made comfortably warm, it would be most satisfactory to dip the lambs in one or other of the sheep dips advertised in the FARMER'S ADVOCATE. They are all good, and full directions for use go with each can sold. The lambs should be rather closely housed until they are nearly dry. A more pleasant method of treating the lambs at this season is to open the wool on the neck, breast, sides and belly, at intervals of about two inches, and dust in pyrethrum, a yellow powder known as Parisian insect powder. This will destroy most if not all of the ticks. It would be well to have them all dipped when the warm weather arrives.]

Chatty Stock Letter from Chicago.

FROM OUR OWN CORRESPONDENT.

Following is a statement of current top prices with these of the previous week and a year ago:

Cattle.	Past Week.	Previous Week.	Year Ago.
1500 lbs. up.....	\$ 6 00	\$ 6 00	\$ 6 10
1350 to 1500 lbs.....	5 95	6 00	6 00
1200 to 1350 lbs.....	5 85	6 00	6 10
1050 to 1200 lbs.....	5 45	5 55	5 40
900 to 1050 lbs.....	5 15	5 55	5 35
Feeders.....	4 50	4 65	5 00
Fat cows and heifers.....	4 50	4 60	5 00
Canners.....	2 60	2 65	2 85
Bulls.....	4 40	4 45	4 50
Calves.....	6 25	6 00	9 00
Texas fed steers.....	4 50	4 50	5 15
Hogs—			
Mixed and butchers.....	5 45	5 40	4 97½
Heavy.....	5 45	5 40	5 00
Light.....	5 40	5 35	4 90
Pigs.....	5 20	5 20	4 75
Sheep—			
Fat wethers.....	4 50	4 60	5 00
Ewes.....	4 00	4 00	5 00
Westerns.....	4 50	4 55	5 40
Yearlings.....	5 15	5 00	6 15
Native lambs.....	5 35	5 50	7 20
Western lambs.....	5 35	5 50	7 05
Colorado lambs.....	5 20	5 35	7 00

Cattle feeders are marketing too many low-grade and unfinished cattle. The outlook is poor on the unfinished kinds, while good to choice ripe cattle are in better demand. Fat ripe 1,700- and 1,825-lb. cattle have sold at \$5.10 and \$5.80, with prime 1,926- and 1,957-lb. cattle on the Glasgow export order at \$5.60. Ripe, well-bred yearlings, 1,150 and 1,175 lbs., sold at \$5.50 and \$5.65.

The extremely cold weather is working badly for the stock and feeder trade in two ways. It has forced in a great many young cattle and at the same time made it harder to sell them, as the demand is always smaller at such times.

There is really a very strong demand for the cheap grades of cows, and stocks of canned goods are small at home and abroad, and buyers seem to want all the cows of the canner class the country has to offer.

The most notable feature of the hog situation lately has been the small supply of 260- and 300-lb. barrows. There has been no complaint about the quality of the hogs, but the animals coming are mainly too young to have the desired weight.

Sheep and lambs have been selling very unsatisfactorily. With receipts comparatively small and the supplies for the year so far showing a decrease of some 27,000, with prices \$1.50 lower on sheep and \$1.75 lower on lambs than a year ago, the selling interest is at a loss to show how to account for the present dullness of the demand for sheep and lambs.

If it were not for the big export demand, the sheep and yearling market would not be as good as it is.



Another Home Topic.

A plea for greater simplicity in our mode of living has been aptly called the "Gospel of Wisdom," and the fact that there are now so many voices raised in its favor shows us that we may, with some assurance, prophesy for the new century a return to the reign of common sense in our habits, homes, and social lives, whether amongst city, suburb or country surroundings. Some very pungent remarks, some very sharp criticisms and some very real words of wisdom have been uttered upon this subject. They are all very suggestive too, and attack not only the unnecessary work entailed by this superabundance of furniture and the so-called ornamentation of many homes, but they impugn the taste which inspires it and the positive folly of those who indulge in it. They claim that many women are mere slaves to their furniture, that their lives are "dominated by objects of wood and clothes and silk," of which they make their household gods, and if they do not fall down and worship them it is because they are too busy dusting them to have time for the ceremony.

A clipping from an unknown source has come into our hands, headed "Bad Taste in Furnishing - Ignorance of the Woman of To-day, by a Man and an Artist." Every sentence, from his first to his last, is an indictment, and as he fires shot after shot, one can almost hear his victims groan as they fall. He begins by affirming that "the curse of the modern home is useless bric-a-brac, that a room in which we can freely breathe is so rare that we are instinctively surprised when we see one, and that it is the exception, rather than the rule, when we find a restful room." Furthermore, he claims that to this common error of over-furnishing our homes is directly due the nervous breakdown of so many of our women, and that this rubbish - of a costly nature where plenty exists, and of a cheap and tawdry character in homes of moderate income - is making housekeeping a nerve-racking burden. The man and the artist - for he complains and suffers in both capacities - alludes in no measured terms to "those unspeakable drawing-rooms" which are the outcome of the prevalent folly of setting aside a room for "company," one which is seldom used by the family itself. Who does not know such rooms, and who does not really prefer the privilege of being admitted into that inner circle of familiar intercourse - the "living-room" - of the home we visit? Some of the animadversions are not only true, but inexpressibly funny. Their writer pokes fun at "the puny gilt chairs, upon which no one dares to sit; at the walls, upon which are hung impossible paintings with equally impossible massive gold frames; at the 'elegant' couch upholstered in silk and satin; the gold clock, which never 'goes'; the mantel of solid onyx; the Chippendale cabinet, and the Louis XV. sofa." All of which he sums up as "disfiguring, useless ornamentation."

Our plea, then, is for simplicity, a better understanding of our actual needs and the meaning of the words "comfort" and "rest" in our homes. Simplicity involves utility, for if we only purchase what we want, we shall see that it is good of its kind, and made to last and to serve its purpose for generations to come. Every article bought with a single eye to its purpose will surely be in better taste and of better quality than those purchased for ornamentation only. The woman whose mistaken ambition is to have a more finely-furnished house than her neighbors sacrifices not only her own comfort, but often that of her husband and children too. The boys find, elsewhere, unsuitable playmates for themselves, "because there is no room for us at home," and the girls imbibe altogether mistaken notions, which will influence them when they in their turn become the housekeepers and house mothers of their generation.

The ADVOCATE finds its way into homes of every kind, as well as into so many of the farm homesteads of our broad Dominion, where the problem is but too often how to get enough furniture for necessary comfort, a problem which not seldom finds its solution in the very ingenuity and adaptability to circumstances it develops within the family circle itself. We venture to think that one class of our readers could derive much benefit from the experience of this other class, who, from distance from main thoroughfares, or from other exigencies of their position, have to make a little go a long way, whose question in making a purchase is not how cheap, but how good is it? and to whom the very subject upon which we write must appear not even a mere fad only, but a positive craze about the merits or demerits of which they may have no inclination to trouble their heads. But for the sake of those others whose heads the can may possibly fit, we venture to add to our little group of home topics this plea for greater simplicity in our lives, in the hope that its consideration may not be without some profitable result. There must be a happy medium somewhere. Let us do our best to find it.

H. A. B.

A Word to Our Correspondents.

First of all, let us thank those who have sent to the Home Magazine some of their thoughts in connection with one or more of the home topics, the keynotes for which have been intentionally struck by articles written for our pages. We desire to evoke just such thought, and as far as our limited space permits, we will endeavor to publish them, but we cannot always take the full manuscript as it stands. The editorial scissors must now and then be called into use and the editorial pen do its duty in condensing or adapting the material sent, retaining as far as possible the actual expression of the individual thought of its writer. With this understanding, what our correspondents send us will find a welcome in the Home Magazine of the FARMER'S ADVOCATE.

THE CHILDREN'S CORNER.

An Old Tease.

"The day's work is done,
My dear Biddy," said Pat,
"And why do ye sit
With yer sewin' like that?"
"Yer eyes are too old,
And yer fingers too lame."
But Biddy replied
"I shall sew all the same!"
So Pat got a straw,
For an old tease was he,
And tickled the ear
Of poor Biddy McKee.
Did Biddy get cross?
Why, just look at her face!
Such a smiling old pair
Any cottage would grace.



Though three score and ten,
'Tis their honeymoon still -
May we be as jolly
When sliding down hill!

C. D.

Our Prize Competitions.

I hope you will all try to write, this time, for our subject is a grand one. Three prizes will be given for the best original papers on *How Queen Victoria won the love of her people*. All boys and girls under sixteen may compete. The papers must be short, not containing more than 400 words. Write your name, age and address on the back, and post before April 15th.

Address as usual to Cousin Dorothy, Box 92, Newcastle, Ont.
The prize story in Class III. - sent in by Ruby Carr, Trout River, Que. - is called:

A REALLY GREAT GIFT.

She was a child of the slums, a ragged, unkempt, forlorn little girl of about ten years of age. Someone had given her a penny, and she had hurried away to the penny store, and there purchased a long stick of striped red-and-white candy. She was running along the street, proud and happy in her rare possession, when I saw her.

Suddenly another little girl, equally ragged and forlorn-looking, came limping out of the dark hallway of a dilapidated old rookery of a tenement house. She was very lame, and had evidently suffered much in her short life. Her face had a drawn and prematurely-old look, such as one is always sorry to see in the faces of children.

The two little girls met, and the one with the candy held it aloft, exclaiming: "See what I've got! Just see what I've got!"

"Where'd you git it, Janie?"

"Bought it."

"Where'd you git the money?"

"A man gave it to me for scooting after his hat when the wind blowed it off."

"Gimme some of it, won't you, Janie? Please do."

There was a wistful, eager, hungry look in the drawn little face.

Janie hesitated. Evidently sticks of candy came rarely to her. She looked longingly at the candy and then at the little girl. Suddenly she rushed forward, saying, eagerly, joyously: "You take it all, Maggie; you take it all! You can't scoot after gentlemen's hats and earn pennies, and I can. So you take it all; and if I get a chance to earn another penny, I'll give it to you to buy anything you want to with it."

Generous little heart, in which love of self had not yet found an abiding place! What a lesson it

taught to the grasping and self-centred, who care not for the wants, the weakness or the woes of others.

RUBY CARR (aged 11).

The fourth-prize story will be published next month. I have not yet heard whether all the winners received their prizes.

Frances Pritchard has sent in her name as a member of the Lookout Regiment. She is nineteen years old, and it is a great pleasure to find that others beside the children take an interest in our Corner.

Now, children, don't be afraid to attempt this new competition. It won't hurt you to try, even if you don't win a prize. The competitors may be divided into classes according to age, or the prizes may be given for the three best papers - it all depends on the number and quality of MSS. sent in. The subject is a big one, and if nearly everyone is afraid to attempt it, why you will have all the better chance. My advice is - Try!

COUSIN DOROTHY.

A Canadian Girl in Dresden.

NO. III.

DEAR NELL,

This is the last letter from the dear old town, which has become so homelike during the past few months, and now I must gather up the threads and give you a brief account of our later doings.

We have heard so much fine music that, although much of it will pass away from my memory, my heart seems stored full of melody for many a month to come. Of all the masters in orchestral music, to me Beethoven is the master. Surely his being deaf to all ordinary petty sounds and speech of men must have made him only more sensitive to the musical silences of the earth! Do you remember what Carlyle says about "seeing deep enough and you see musically?"

To hear Patti was another treat, though Alice, who has been entranced by Melba and our own Albani, thinks this should "positively be Patti's last appearance." It seems incredible that she is well over fifty years of age, for the voice is still wonderful, and when she sang "Home, Sweet Home," and Wagner's "Traum," the low notes were simply delicious. She was magnificently dressed, and blazed with diamonds; but what should have been an almost venerable grey head was covered with a fuzzy auburn wig. There was a pretty little scene as we were waiting for our carriage. It was snowing hard and there was no covered arcade for the carriages as at the Hof theatre. Suddenly the crowd of cloaked and furred women was parted by two tall flunkies bearing aloft huge silver candelabra. They paused just at the edge of the pavement, and then the pretty Princess Frederic August was handed down the steps by a resplendent officer and passed along between the rows of eager women, smiling and bowing in the sweetest, most gracious manner. The royal family of Saxony is not very interesting to look upon, with the exception of this princess.

Last week we took tea, or, rather, coffee, with our friend Frau Bancks. Her mother, a fine old lady, must have found our visit somewhat trying, for she had a weary look as she sat upon the sofa, the seat of honor, trying politely to keep up a conversation, chiefly in ejaculatory Deutsch, with Alice. You would admire that young person's courage in German conversation. What she doesn't know she invents, and the result is enough to make Mark Twain retract what he has said of the difficulties of the German tongue. I entertained the small grandson, Constantine, with an account of our camping in Stony Lake. He seemed vastly and unnecessarily awed, and now I am wondering if my limited power of expression in a foreign language has given him a false impression of our life in Canada. He probably pictures me at home in a dirty wigwam, dressed in buckskin, with ornaments of teeth, selected from the early settlers, and sniping Redskins in my leisure moments.

Of course, we have left ever so much sightseeing for the last few days, and I know we shall leave Dresden without seeing half its places of interest. We spent a long, delightful morning in the Green Vault, and came away fairly dazzled with the blaze of jewels. Room after room crowded with precious curios, invaluable ivories and crown jewels. In some way the Polish crown jewels have come into the possession of the King of Saxony, and the two sets make a show before which even the British insignia in the Tower might pale into comparative insignificance. I could make your feminine soul green with envy if I had time to dilate on the tiaras, necklaces, garters and bracelets, all one mass of diamonds, rubies and sapphires. There were two or three pink diamonds, which the guide told us were very rare.

On Sunday last I saw, as well as the dim light permitted me, a gem of another kind, i. e., the fine altar-piece of the Ascension, by Raphael, in the Royal Church on the Schloss-Platz. The royal family were present on the occasion, occupying the state pew in the gallery.

Well, dear, it won't be very long before I see you. I'm looking forward to the tennis and canoeing, though I shall miss all the excitement and interest of this busy, quaint place.

In the meantime, I remain,

Affectionately yours,
FAN.

Notice.

We would call the attention of our readers to the address of loyal affection to the Crown and Queen Consort which it is proposed to send with the signatures of the women of Canada. This movement has the hearty support of Her Excellency the Countess of Minto. The local papers throughout Canada will be asked to give the full text of the address, and the central point for obtaining the signatures will be arranged. Do not let the women of our farm homesteads be left out.

THE QUIET HOUR.

Asking for Counsel.

"God's own hand is pledged to guide me,
God's own strength my strength shall be;
I have God's own eye to watch me,
God's own ear to hear my prayer,
God's own Word to give me orders,
God's own arm my loads to bear."

When King Hezekiah received a threatening letter from a great and powerful enemy, instead of giving way to despair, he did a very sensible thing. Going straight up to the Temple, he spread the letter before the Lord, asking for counsel and help, and very effectual help was given. First came the message concerning the King of Assyria, "He shall not come into this city, nor shoot an arrow there, nor come before it with shield, nor cast a bank against it." The promised deliverance swiftly followed, for "the angel of the Lord went out, and smote in the camp of the Assyrians an hundred fourscore and five thousand."

Our own much-beloved Queen knew that only God could give the wisdom needed to govern a great nation. She passed the first hours of her reign on her knees, praying for herself and her people. Surely her glorious reign proved the value of her constant practice of asking counsel from God.

When people feel utterly helpless they often turn to God, but that is not the only time to ask counsel. Sometimes we fancy that our own judgment is quite enough for the case, and, because we don't ask for wisdom, we make very serious mistakes. Do you remember how Joshua was deceived by the Gideonites? It looked such a simple, easy matter to decide. Here were ambassadors claiming to have come from a far country. They were clever actors, and had dressed for the part with crafty skill. Their clothes were old and tattered; their bread was dry and mouldy; their goat-skin bottles old, and rent, and bound up. Who could have suspected that these apparently toil-worn travellers were near neighbors? Joshua and the princes were easily persuaded to make a league with them. Why? Because they "asked not counsel at the mouth of the Lord." If we form a habit of asking for wisdom and tact in small matters, there is not much danger of our neglecting to do so in important questions. It is hardly necessary to say that I would never dare to write the *Quiet Hour* without earnest prayer for guidance and help. Words which will be read by thousands are not to be lightly written. It is no wonder that I should echo the words of Miss Havergal:

"O teach me, Lord, that I may teach
The precious things Thou dost impart;
And wing my words that they may reach
The hidden depths of many a heart."

But can we always be sure that anything is of small importance? Is not even an ordinary friendly letter an opportunity of influencing another, an opportunity not to be lightly thrown away? Surely it is worth while to secure God's help when it can be done by a momentary prayer.

"Speak with Him thou, for He hears, and Spirit with Spirit can meet;
Closer is He than breathing, and nearer than hands and feet."

When members of the St. Andrew's Brotherhood are trying to influence a young man, they are advised to make their calls not alone, but with a companion. While one does the talking, the other prays silently. Thus they may be sure of directing their friendly campaign with tact, discretion, and common sense, a most difficult quality to gain.

Those who make a habit of looking up to God many times a day, can answer for the truth of the promise: "Before they call I will answer; and while they are yet speaking I will hear." Every morning, when we wake, our eyes should open to the vision of Christ's face. Drummond says: "Five minutes spent in the companionship of Christ every morning—ay, two minutes, if it be face and heart to heart—will change your whole day, will make every thought and feeling different, will enable you to do things for His sake that you would not have done for your own sake or for any one's sake." It is not only wisdom and help that we may gain by putting all our affairs in God's hands; it will also free us from worry and anxious care. If we say, honestly, "O Lord, I am oppressed, undertake for me," and then trust Him to make all things work together for our good, confidence and peace will drive anxiety and worry out of the citadel of our soul.

"Hidden in the hollow
Of His blessed hand,
Never foe can follow,
Never traitor stand,
Not a surge of worry,
Not a shade of care,
Not a blast of hurry,
Touch the spirit there,
Stayed upon Jehovah,
Hearts are fully blest,
Finding, as He promised,
Perfect peace and rest."

HORE.

The Kicking Horse Canyon.

Near the "Great Divide," where the dancing waters part into two separate streams—the one to flow into the Pacific, the other into Hudson's Bay—the Canadian Pacific Railway descends with a rapidity only made possible by one of the many engineering triumphs to which we owe the opening up of the whole route. As it passes the beautiful lake, crosses the deep gorge of the Wapta or Kicking Horse River and seems almost to cling to the mountain sides, the traveller, breathless and awe-struck, looks down upon the water, which appears but as a silver thread a thousand feet below. Our picture does not show us the rock formation which, from a certain similitude to a horse with hind legs elevated after the manner of that animal when of a different mind to its rider, suggested the cognomen of Wapta, or Kicking Horse, to the Indian who thus named it: nor does it present to us the river in the wilder mood, but rather is it suggestive of the horse which, though champing its bit and with mouth still foam-covered from the late conflict of wills, has yielded to the inevitable and goes on its course without further useless remonstrance. Speaking of the great glacier field of the Northwest, which has been



THE KICKING HORSE CANYON.

aptly called "The New Tourist Mecca," Mr. Duchesnay, Superintendent of the Pacific Division of the Canadian Pacific Railway, has aroused considerable interest in scientific circles and amongst prominent botanists by his recent discoveries. He tells also of the exquisite flora found upon the high level meadow which furnishes pasturage for the innumerable wild goats which make it their home. Mr. Duchesnay claims that the great Illiciliwaet of which so much has been written by leading explorers does not overshadow in magnitude and grandeur the glaciers to the north of Field. Trails have been blazed to "Look out," and to a point opposite Wapta or Kicking Horse Falls, where the water drops over a ledge of 1,200 feet above the surface of the pool, and the C. P. R. are planning to erect platforms on the rocks for the benefit of the tourists who in increasing numbers are likely to visit this lovely part of our vast Dominion. The whole route is one of frequent surprises, and to every reader of the *Advocate* who can do so, we would say, if you would realize what a heritage is yours as a son or daughter of Canada, take the trip from the Atlantic to the Pacific Ocean by our Canadian Pacific Railway; or, if you cannot do this, read books and collect pictures, which, in some measure, will supply the place of a personal acquaintance with the varied beauties of the scenery. It is astonishing what an amount of travelling can be accomplished, book in hand, in a "rocker" upon one's veranda in summer, or in an easy-chair on a long evening in winter.

H. A. B.

A young fellow, having been asked by a recruiting sergeant if he wished to enlist in a Highland regiment, replied: "No likely I'd rather go to a lunatic asylum." "Aweel," said the sergeant, "I've nae doubt ye'd feel more at home there."

My Neighbors' Children.

BY MRS. EVERGREEN.

There is such a difference in these children. Mrs. Lang, my right-hand neighbor, has a family of fine, healthful-looking boys and girls; while Mrs. Hilton, who lives on the other side of our farm, has two pale, delicate-looking little ones. The contrast is so marked that I have often wondered at its cause. Both families living on farms, sharing the same advantages with regard to fresh air, good water, abundance of fruit and vegetables, etc., yet what a contrast! With a view of investigating the matter, I decided on paying a friendly visit to each house.

Visiting is not always pleasant at Mrs. Hilton's; she is so full of complaints, and of her own affairs. One has to hear all about Johnny's last illness, and Susy's not being able to go to school; about both children's delicate appetites, which must be pampered by all sorts of rich dainties, for they do not care for "common food"; about the heavy bills for medical attendance, and so on. However, wishing to make Mrs. Hilton a real, old-fashioned visit, I started off early in the afternoon, taking my knitting. It happened to be my neighbor's ironing-day, but as we were women, we could easily keep iron, needles and tongues going all together.

I noticed how deftly the iron smoothed out the pretty frilled aprons for Susy, and the hand-knitted lace on the pillow-cases.

At four o'clock my hostess said it was time to see about tea, and as her bread was a little dry, she would make some light cream biscuits. I begged her not to do so on my account, but the children said, "Oh, please do, mamma, and give us maple syrup with them!" (You see, not being well, the children were not at school.)

Besides these rich biscuits, there were doughnuts, two other kinds of cake, fruit, meat, pickles and pie on the table, and those children ate freely of everything but bread, which they thought was "too dry." I now began to see how to account for the pale faces and doctor's bills.

After tea the cows were milked and the calves fed. These calves were great pets, and deservedly so, for they were beauties, fat and sleek, fed on good, pure milk, and I said to myself (wishing that I had the courage to say it right out), "If those pale, thin children had taken a bowl of that rich milk, with that despised bread, for their tea, they would be stronger and more healthful." As I walked home across the fields, still knitting, I thought to myself, "Dear me! it would be almost better to be a calf than a child, on that farm!"

Not long after, I thought I would go to see how Mrs. Lang was getting on with her fall work. We had exchanged settings of eggs in the spring, and I wished to know how many chicks she had raised. Some way, I always like to go to Mrs. Lang's. She is so cheery and sensible, and her three boys and two girls seem so happy in their home, which is plain but comfortable.

We spent a delightful afternoon, talking of many interesting things. The children came in from school, and went cheerfully about their several duties. The eldest girl got the tea ready while the mother and I took a walk in the garden. When we were called to tea, I was secretly wondering what we were to have, as the mother had said nothing about preparations, but we sat down to a well-appointed feast: good bread and butter, buns, cold ham, apple sauce, and best of all, baked beans. I was greatly impressed with the dainty table-manners of the children, and the evident relish they had for the good, wholesome food. No bolting of rich food in this house; no signs of dyspepsia. Mrs. Lang seemed to have solved the problem of "plain living and high thinking," and her children showed the good effects of it.

An Irishman recently went to the market to sell a live cock, which had unfortunately lost an eye. While exposing the bird for sale, a man offered him two shillings for it. "Be off wid yer, exclaimed Pat, 'two shillings for a cock like that.' 'Well,' said the man, 'it has only one eye, don't you know?' 'Wan eye, did you say?' roared the artful owner. 'Can't yer see the cock is only giving me the wink not to take your offer?'

Some time back near Paisley, Minister meets John, who has of late abandoned church-going. Minister: "Well, John, I haven't seen you at the kirk for some time past, and would like to know the reason?" John: "Weel, ye see, I hae three decided objections fur gaein'. Firstly, I dinna believe in bein' whaur aye daes a talkin'; secondly, I dinna believe in sae muckle singin'; and thirdly, in conclusion, 'twas there I got the wife."

Ingle Nook Chats.

"Joy to the people, and joy to the throne. Come to us, love us and make us your own: For Saxon or Dane or Norman we, Teuton or Celt, or whatever we be, We are each all Dane in our welcome to thee, Alexandra."

These words, written thirty-eight years ago by our late poet-laureate, are as appropriate now as then, were not the universal gloom which shrouds our beautiful land too deep to yet permit expressions of joy. "Victoria the Good," it is at least a consoling thought to know that her many admirable qualities bid fair to be perpetuated in her who now wears her title; and when Queen Alexandra lays life's burden down, the greatest tribute that can be offered her will be to say that she has faithfully trodden in the footsteps of her illustrious predecessor. I should like to give one or two anecdotes of Her Late Most Gracious Majesty, but space forbids and my guests demand my attention.

OUR COMPETITIONS.

The fortunate contributors in contest V, are: Class I, Miss Laura E. Marshall, Park Head, Ont., and Miss M. Bertha Warren, Almonte, Ont. (Only one prize was offered in this contest, but both essays were worthy of reward.) Class II, Miss Mossie Bunn, Birr, Ont. Class III, James F. McAllum, Brewer's Mills, Ont. (In this class, Shorey J. Neville and Verne Rowell sent very good essays.)

Norman J. McEachern, "Morag," "Evangeline," Miss Alice McClary, Fannie Newman, "Molly," Martha Kelleher, Waldron J. Greene and Mrs. A. Neville deserve honorable mention. Old and young alike are welcome to our Ingle, and I think we shall give the easy-chair to Mrs. Neville, who is the oldest member of our club. The books written upon by others than the prizewinners are: Pilgrim's Progress, The Squire of Sandal-side, Burns' Poems, In the Golden Days, Lover or Friend, Vanity Fair, The Bible (this was not supposed to be compared with others, being, of course, the Book of Books for all), Uncle Tom's Cabin, Fatal Lilies, Silence of Dean Maitland, and Jean Ingelow's Poems. "Morag" asks, "How shall we make our women patriotic?" As example teaches more forcibly than precept, I think that "Morag" is doing her utmost to attain that end. I believe that were we put to a really severe test, our Canadian women would not be found wanting in that admirable quality patriotism. "Morag's" interesting letters are always sure of a warm greeting. "Molly" did not mention in what class she competed, while some other contributors wrote on both sides of the paper, both of which faults should be guarded against. M. E. L. your work reached me safely.

The conundrums for contest VII, are already coming in, but it is open till March 5th, so there is plenty of time to start yet.

CONTEST VIII.

This is something to interest those who love rhyme. We furnish a set of rhyming ends, and contestants are to fill in the lines and complete the verses, the subject of the poem to be

Queen Victoria.

1st verse— land foam band home hearts sea departs free place green grace Queen

Three prizes are offered, one in each class, classes to be divided as before, and contest to close April 5th. It should be a labor of love to endeavor to pay tribute to one of earth's noblest women, and I trust many of you will do so. Perhaps you think you cannot write in rhyme? Never venture, never win. The rhyme part is there, only a skeleton: it now wants filling out. Just try your luck. THE HOSTESS, Ingle Nook Chats, Pakenham, Ont.

PRIZE ESSAYS—COMPETITION NO. 5, CLASS I. BY MISS LAURA E. MARSHALL, PARK HEAD, ONT.

The Book I Like Best.

What book do I like best? This question causes some thoughtfulness. As I turn over in my mind the pages of the books which I have read, I know at once the book of history that I like best, my favorite novel, and the best modern romance; but when it comes to the one book of all books, it is hard to decide. Then, I say to myself, supposing I were cast upon a desert island and had only one book to read—excepting, of course, the Bible—what book would I wish that to be? And my heart has answered, "David Copperfield." Dickens, with his inimitable style and wonderful knowledge of human nature, has woven under that quaint title the masterpiece to which I offer homage. As to why I like it best, I again say to myself, if I had only one book to read, what characteristics would I wish it to contain? I would want a book which would last—which would stand re-reading in short (as Mr. Micawber would say), a book in which, no matter how often I read it, I would find something new. And so it is with "David Copperfield." Every time I read it I find something which I had not noticed or perhaps had not understood before.

There is no book in which I so truly live as in David Copperfield. Dickens has painted his characters with such distinct and striking individuality that I follow each career with equal eagerness. How I long to snatch little David from the clutches of ominous Mr. Murdstone, and to warn the gentle Clara from her fate. I watch dear old Peggotty shedding her buttons, and willin' Barkis making his usual trips in the cart. While I watch eagerly for the next appearance of Aunt Trotwood in the stave, I rejoice with generous Traddles over each new bit of treasured furniture. I follow up with equal interest the tumble Uriah Heep and the unperturbable Mr. Micawber and his loyal wife. I sadly watch the fates of faithful Ham, gentle Little

Emily, and Steerforth, so handsome and fascinating, and yet so treacherous. And while I mourn for the death of childlike Dora, I long to tell David that Agnes, with her strong, beautiful nature, loves him. Truly, in this book one can "rejoice with them that do rejoice and weep with them that weep."

Dickens has that peculiar style of writing which keeps "a smile on your face and a tear in your eye." A vein of humor runs through his book, and though it seldom comes right to the surface, yet it makes itself felt throughout. But the extreme pathos of some passages of the book might easily call the tears to the eyes of the sturdy-hearted. This mingling of humor and pathos adds a great charm, but it is only one of many. In fact, Dickens has woven his romance of David Copperfield so that it appeals to all that is good in our natures, and so it holds superiority over all other books—in my mind at least.

PRIZE ESSAY—CLASS III.

BY JAMES F. McALLUM, BREWER'S MILLS, ONT.

I think "Uncle Tom's Cabin" the best book in the line of fiction that has ever been written, for the following reasons: It has done more good, from a common standpoint, than any other book that has ever been written. At the time it was written it opened the eyes of the people of the North to the real pitch to which slavery had come. It also gives us a vivid picture of the bright and dark sides of slavery: how the slave regarded his master, and how, as a rule, they were treated. To this book directly can be traced the agitation which, on Lincoln becoming president, ended in the final act abolishing slavery, and the Civil war. The author, Harriet Beecher Stowe, must have had a wonderful knowledge of human character. How much truer could her characters have been to life than the fickle, selfish Marie; the thrifty Miss Ophelia; the honest, Christian-spirited Uncle Tom, and the coarse, brutal, ugly, drunken creature, Legree. The book is no ordinary novel with a tender love-story threaded through it, but far more fascinating than if it were. None of the sensational writers of the day can equal the happy ending which it has: indeed, the standard authors can scarcely equal it.

"Do Not Be Cross."

Oh! do not be cross, dear; It is not worth while To fret and look sulky. Just wear a sweet smile. Let what ere will happen, Come trouble or loss, Just bear with it bravely, But do not be cross.

Oh! do not be cross, dear, With those in your home; You know that they love you. Whatever may come, So try to be cheerful, Try to be true, But do not be cross, dear, Whatever you do.

You would not be cross, dear, With strangers,—ah! no; You'd smile on them kindly, As through life you go, But you fail to distinguish The gold from the dross, Or else with the home ones You would not be cross.

Recipes.

SHORTBREAD.

Ingredients—One pound of flour, 1/2 lb. of butter, and 4 ozs. of sifted sugar. Mix the flour and sugar together on a board. If the butter is salt, wash it and squeeze it dry in the corner of a clean towel. Put the butter on the board along with the dried ingredients, and work the flour into the butter with the hands, kneading it well. After the flour is all worked into the butter, knead the whole a little, then shape out into a cake. Pinch the edges of the cake. Pick over the top of the shortbread with a fork or skewer, ornament with strips of candied peel or large sweeties. Lay the shortbread on a greased tin, and let it bake in a slow oven for about three-quarters of an hour, till it is pale brown. Allow it to stand for a minute or two after it is taken out of the oven before lifting it off the paper.

MARMALADE.

Take the weight of twelve Seville oranges in loaf sugar. Wash the oranges well, and remove the peel; then take away from it some of the pith. Boil these rinds for two and a half hours in water, which should be changed twice.

Mash the pulp up well, and take out all the pips. When the rinds are soaked enough cut them up very finely in shreds.

Now put the sugar into a pan, with one pint of water; boil it for ten minutes, skimming it well.

Next put into the syrup the pulp, shreds of peel, and the juice and grated rinds of two lemons.

Boil all this for about thirty minutes. Put in jars and tie down when cold.

"Get up and rock the baby, Michael; don't ye hear it crying?" "No fears, Bridget; it is n't my place to rock the baby." "Oh, Michael, ye know one half of the baby is yours, and the other half mine." "Well, then, get up and rock your own half, and let my half howl."

Chores.

Our chores on the farm are our regular out-of-door duties about the house and barns. "Chore" comes from the old English word "chor," meaning work done by the day, and was also used as a verb as in the expression, "The chor is chored," as the good wife said when she had hanged her husband, from which we naturally infer that the word was not then used in the sense of daily occurrences.

Chores are perhaps not among the events on the farm, but to their importance we can fully testify, more especially if they are left undone, which is true of a great many things in this world besides chores. Perhaps we think we are not accomplishing anything in doing the everyday tasks; perhaps we think our efforts are to no purpose when there seem no immediate results to show for them. But suppose we neglect those duties. Suppose, for instance, that we do not feed the hens, or empty the ashes into the "leach," or bring in the kindling wood at night, are the results as unimportant as we deem the work to be? Well, that depends a good deal on ourselves. Certainly, we shall have to "hunt" for eggs, and there will be no danger of inquisitive chickens falling into the soft-soap barrel in the summer, and the absence of kindling wood in the morning may mean the absence of a sharp breakfast and the presence of some sharp tempers, with similar conflicting absences and presences during the day. It isn't the most conspicuous deeds, or the most conspicuous people, that are of the greatest importance in the world, after all. "Whether you cut your swath on the upland or on the lowland does not matter. It is how you cut it that counts when wages are paid."

The winter season is the time on the farm for doing those odds and ends of chores on which so much of the work of the rest of the year depends. The elements, or, rather, the rudiments, of most professions are evident in the work of the farmer, and if he would only stop and think of this sometimes, he would see how, in reality, his is the broadest and most useful profession of all. For instance, there is the annual wood-pile to "work up." That is one place where the ministerial element comes in. There is good wood, and there is bad, just as there are good and bad people, but there is some good, even in the worst, and a use for it too. So both wood-cutter and minister alike need not only a discriminating eye, but also a full measure of that charity which "is not easily provoked and thinketh no evil." Then, there is the mending and repairing of things in general. That is the doctor's part (and the dentist's, too, of course, for even farm implements have teeth), and, in this respect, the farmer has the advantage over the professional, in that he has the pleasure of curing without giving pain, unless he happens to strike his own thumb with the hammer. The druggist is there, too, in the spirit, as is shown by the various bottles and boxes in the stables, which about once a year are assembled together in true apothecary style, minus, only occasionally, such immaterial details as labels, corks, etc. The sorrows and trials of the teacher are also experienced, as the boy can tell you who breaks in the three-year-old or tries to drive the pigs into their new pen. And the musician, and the artist, and the author? Well, there's always music in the farmyard, and there's always beauty of form and color, and there are always "chores."

But what of the lawyer? Oh, that's the storytelling part. That part comes when the chores are all done, and the lamps are lit, and we sit about the ingle nook and "hae a crack," and tell true stories. It is these chores, these common things, that make up our lives for the most part, and how much more complete those lives would be if we would only bear this in mind and try to live up to it!

"A word that gives us courage new, A smile that beams as fair as true, A voice that hope and sunshine brings, How good, how true life's common things."

"CHRYSOLITE."

The Growth of Human Sympathy.

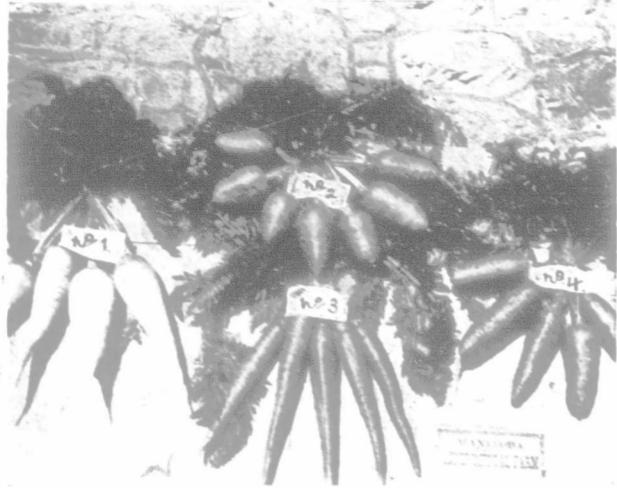
One of the most remarkable features of the nineteenth century has been that growing sensibility in men's minds to human suffering, and the consequent putting forth of many noble efforts to combat and alleviate it. Instances of this kind are so familiar to all of us that we seldom perhaps estimate them at their due worth.

The Royal Infirmarys and hospitals of our large towns, all maintained by voluntary contributions, are noble examples of the growth of human tenderness and sympathy. Of the lifeboat service the same holds true.

Then there has been an almost phenomenal growth of houses of refuge, homes for the destitute, ragged schools, children's shelters. The sick, the poverty-stricken, and the fallen have all had held out to them the helping hand, and the "cry of the children" long neglected has reached the hearts of the people.

Doctors and scientists have spent their days and nights striving to discover means of alleviating pain and suffering. The nineteenth century has given to the world no greater boon than the discovery of chloroform, by Sir James Simpson. Of equal importance to suffering humanity was the introduction, some thirty-five years ago, into the Glasgow hospital of the antiseptic method by Lord Lister. This, as has been said, "put the crowning stone on the edifice of surgical discovery."

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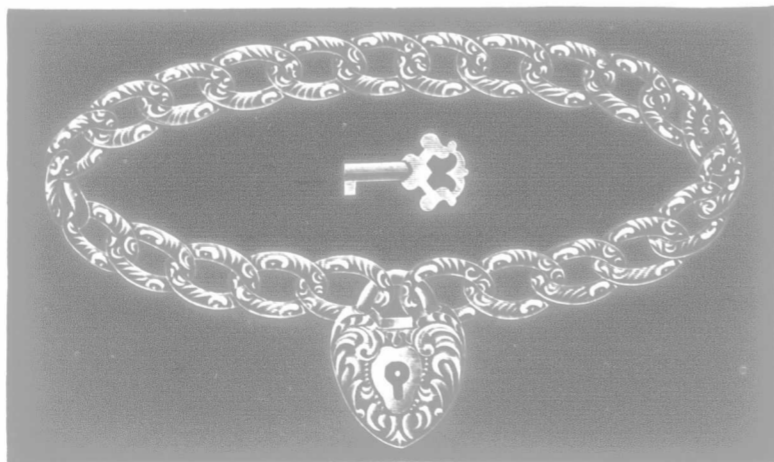
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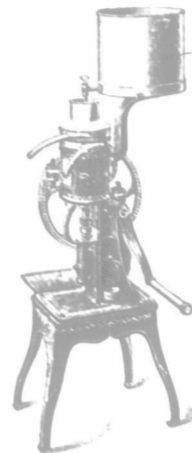
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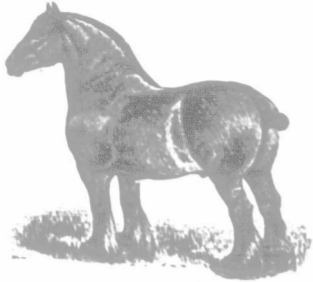
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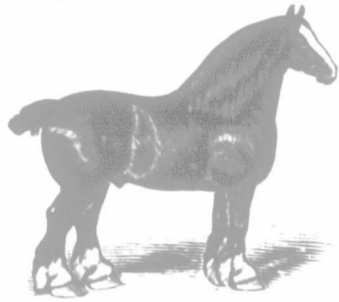
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Champion herd of Western Canada. Best beef cattle in the world. Sturdy young bulls for sale. Also cows and heifers. Nearly 100 head to select from. A few choice Light Brahma cockerels for sale. J. E. MARPLES, Deleau, Manitoba.

Roxey Stock Farm, BRANDON, MAN.

J. A. S. MACMILLAN, IMPORTER AND BREEDER OF PURE-BRED Clydesdales, Shires, Hackneys.



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

Clydesdale Breeders Meet.

The annual meeting of the Canadian Clydesdale Association was held in Toronto, Feb. 7th. The attendance was much larger than usual, and much enthusiasm prevailed. The President, Peter Christie, Manchester, Ont., conducted the deliberations. The Secretary-Treasurer reported 336 registrations during the past year, being 51 more than in 1898 and 81 more than in 1899. The Association has a cash balance of \$240. After a lively discussion by the members respecting the safeguarding of the interests of stallion owners, it was resolved to memorialize the Provincial Government to pass such legislation as will guarantee the owners of registered stallions payment of service fees by making the purchasers of in-focal mares liable for payment of such fees if not paid by the former owner. An Act such as Manitoba has was strongly recommended, which gives the stallion owner a lien on the mare and offspring till the service fee is paid.

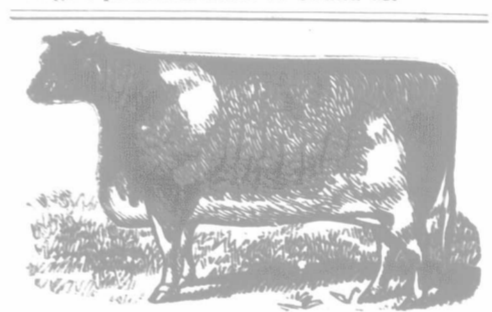
Officers were elected as follows: President, Peter Christie, Manchester; First Vice-President, John Davidson, Ashburn; Provincial Vice-Presidents—Douglas Sorby, Guelph; Robert Ness, Howick, Que.; J. E. Smith, Brandon, Man.; John A. Turner, Calgary, Alberta; J. A. McFarlane, Saskatchewan. Secretary-Treasurer, Henry Wade.

Directors—Thos. Graham, Claremont; Jas. Henderson, Belton; Jno. Vipond, Brooklin; Geo. Moore, Waterloo; O. Sorby, Guelph; D. McCrae, Guelph, and William Hendrie, Jr., Hamilton.

Recommended Judges—Alex. Galbraith, Janesville, Wis.; Jno. Davidson; R. Miller; A. B. McLaren, Aurora, Ill.; Jas. Henderson, Belton, and Geo. Moore, Waterloo. Delegates—Toronto Industrial, H. Wade, Toronto; John Davidson, Ashburn, Western Fair, A. Innes, Clinton; J. Henderson, Belton, Ottawa Fair, Peter Christie and D. McCrae, Guelph, Sherbrooke Fair, R. Ness and Geo. Stewart, Howick, Que. Delegates to Horse Breeders' Association—Wm. Hendrie, Jr., Hamilton, and D. B. Simpson, Bowmanville. The Executive Committee met after the regular meeting, and decided to donate a \$25 cup to the best Clydesdale stallion shown at each of the following shows: Calgary, Alta.; Brandon and Winnipeg, Man.; St. John, N. B.; Halifax, N. S., and Charlottetown, P. E. I. No stallion will be allowed to win two cups. Five hundred dollars was also appropriated to be given in \$50 prizes as bonuses to assist agricultural societies to engage first-class registered stallions, guaranteeing them a certain number of mares.

Cornelius Martin, Wascana, Assa., who has been visiting in Ontario this winter, has purchased the Clydesdale stallion, Highland Sandy, by Tri-stram Sandy, from Alex. Lyons, Kerwood, Ont.

J. A. S. Macmillan, the well-known Clydesdale importer and breeder, of Brandon, reports the sale of the imported stallion, Garland 10555, to John Cowan, Gainsboro. Garland is a bay, foaled in 1897, and got by that famous old stallion, Macgregor (1487), while on the dams side he inherits the blood of Prince of Wales (673), he being the sire of St. Lawrence, the sire of Mary Garland's dam. St. Lawrence was a Glasgow premium horse in '82 and '83.



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.

YORKSHIRES.

Farmers who keep pigs might just as well keep good ones. Once purchased, they are easier kept and give better returns than poor animals. Now is the time to improve your stock. Seven choice young boars and some fine sows for sale. Address: KING BROS., WAWANESA, MAN.

TWIN GROVE FARM.

We lead, others follow, in York-shire pigs, which are the best that have come into the Province. Entire stock for sale at a very low rate. J. S. LITTLE, Proprietor, Oak Lake, Man.

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 Russel, 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.

FORT ROUGE POULTRY YARDS

HAS FOR SALE Golden Wyandottes, Indian Games, Langshans, Pekin ducks, Belgian hares. Seven varieties of pigeons. Also, White Wyandottes, Barred Rocks. Two breeding pens of Black Minorcas for sale, very cheap. FOR PRICE AND PARTICULARS WRITE S. LING & CO., WINNIPEG, MAN.

BLEEDING PILES

And All Other Forms of this Common and Annoying Disease, Cured by the Pyramid Pile Cure.

Thousands of men and women suffer from some form of piles without either knowing the exact nature of the trouble, or knowing it, carelessly allow it to run without using the simple means of a radical cure.

The failure of salves and ointments to cure piles has led many sufferers to believe the only permanent cure to be a surgical operation, but surgical operations are dangerous to life, and, moreover, very expensive, and by no means always, or even often, successful.

The safest and surest way to cure any case of piles, whether itching, protruding or bleeding, is to use the Pyramid Pile Cure, composed of healing vegetable oils, and absolutely free from mineral poisons and opiates.

Mr. Wm. Handschu, of Pittsburg, Pa., after suffering severely from bleeding piles, writes as follows: "I take pleasure in writing these few lines to let you know that I did not sleep for three months, except for a short time each night, because of a bad case of bleeding piles. I was down in bed and doctors did me no good."

"A good brother told me of the Pyramid Pile Cure, and I bought from my druggist three fifty-cent boxes. They completely cured me, and I will soon be able to go to my work again."

The Pyramid Pile Cure is not only the safest and surest pile remedy, but it is by far the widest known and most popular, because so many thousands have tried it and found it exactly as represented. Every physician and druggist in the country knows the Pyramid Pile Cure and what it will do.

Send to Pyramid Drug Co., Marshall, Mich., for little book on Cause and Cure of Piles, mailed free to any address, or, better yet, get a fifty-cent box of the remedy itself at the nearest drug store and try it tonight.—Advt.

A NEW Cream Separator

RIGHT up to 20th century ideas of excellence. A perfect skimmer. Easy to turn. Handiest for washing or putting parts together, and BUILT TO LAST. Beware of out-of-date, complicated machines, and such as are made to sell. The woods are full of them, and they are, oh! so easy to buy. I say, beware of them! I have sold cream separators nine years in Winnipeg, and I have yet to meet the man who will not admit that he got from me the best on the market at the time, and one that gave good satisfaction. I was never in a better position to maintain that record. Send for catalogues, stating how many cows you keep at the pail. Agents wanted in every district. Apply at once.

WM. SCOTT, 206 PACIFIC AVE., WINNIPEG. Consignments of fresh dairy butter handled to shipper's advantage.

BUFF LEGHORNS.

THE best layers known, I have them! If you can beat me either for laying or showing, come along! My layers are my show birds. Also W. Wyandottes and Fancy Pigeons. Stock and eggs in season. Correspondence solicited. WALTER JOHNSON, MARYLAND ST., SOUTH, WINNIPEG.



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 prizewinning Brahmas, Langshans, Partridge Cochins and Bantams. My birds are too well known as prizewinners to require any further reference. Fox Terriers and pedigree Collie pups for sale.

H. A. CHADWICK, St. James, Man. Will exchange my birds above mentioned for first-class Plymouth Rocks, but only for high-class birds, as the birds I offer are all good ones.

S.G.B. Minorcas.

Eggs for hatching now ready. English importations. Birds from the celebrated Pitt and Abbott strains. Our birds are in prime condition for ensuring good vigorous stock. Send in your order now and get some pullets laying early. A few fine S. C. B. Minorca cockerels for sale from above strains. Describe your hens, and I can have a chance to help you out in correct mating.

B. P. Rocks.

Eggs for hatching. Also a few fine cockerels for sale, from best Canadian strains—sturdy, vigorous stock. A. M. Robertson, Caledonia, Ont.

GOSSIP.

R. GRAHAM'S IMP. CLYDESDALE STALLIONS. Mr. Robert Graham, formerly of Claremont, who is now stationed at Ringwood, Ont., some 28 miles north of Toronto, and whose R. R. station and telegraph office is Stouffville, has had a lifelong experience in importing, breeding and developing Clydesdales, and from the recognition he has received from time to time in Canada and the United States, both in and out of the showing, in the capacity of exhibitor and judge, confirms the belief that he is eminently fitted to conduct the heavy-horse business in its various branches. Many of the highest honors have been laid at his feet, from time to time, as an exhibitor in the palmiest of Clydesdale days, when competition was the keenest, and such committees as those of the great Madison Square Horse Show in New York and the World's Fair at Chicago did him the honor of selecting him to place the ribbons at their respective exhibitions, an honor which falls to the lot of few. It is an undoubted recognition of his ability as a judge. When we called on Mr. Graham, early in the present month, we were shown as select an importation as has been our good fortune to inspect for many a day. The lot consists of two 2-year-olds, a 3-year-old, and a couple of matured stallions, and as space will only admit of a brief mention of each, we will take up the bay horse Prince of Currah (1899), by the noted Highland Society winner, Prince Lawrence, out of Rose of Currah (1881) by Highland Chief (1882), and in him his owner has a well-developed sire, full of Clydesdale character, of good size and proportions, having an excellent back and quarters, and standing well on the best of feet and legs, possessing an abundance of bone and hair of the right kind, and with the recommendation of doing satisfactory service in one of the good sections in his native land.

In County Member (1897), by McGregor (1487) (famous as a sire of showing winners), and out of Jess of South Park (3353), by Strathclyde (1588), Mr. Graham has another horse in his prime and of great value at a time when good sires are in demand. He is a horse worthy of the choice of the best sections in Canada or elsewhere, having all the style and substance peculiar to the race to which he belongs, being evenly-developed, with plenty of bone and hair, and the kind of feet without which no good horse is complete. He is a bold, fearless mover, and places each foot where he intends it should go.

In Harmony Boy (1897), by Prince of Currah (1899), and out of Melody (1837), by Prince of Galloway (8919), we saw a well-finished young horse, possessing much individual merit, backed up by the showyard fame of his grand-sire, Prince of Wales, and his progeny, he being acknowledged one of the greatest sires of showing winners. Here we found bone, hair and feet in keeping with the high standing of the importation, having his underpinnings well placed and of great value when moving.

In the two 2-year-olds we saw a pair of promising young sires, selected with a view of combining substance and quality, backed up by such pedigrees as can only be compiled in the heart of the best-known breeding sections, Balmano (1895), by Maines of Airies (1679), and out of Jean 6th by British Lion, a son of the noted Lord Lyon 489, and traces to Leodun Tam. He is a big colt, with a lot of finish and good development, having the moving qualities of one of the lighter breeds, yet full of true Clyde character and type, and furnished with feet fit to withstand any demands that may be imposed upon them; while his mate, Sir Reders (1898), by Knight of Cowal (1004), and out of Garnet (8675), tracing to Fergus Champion through his 4th dam without inbreeding, is a colt from which we should look to hear further. His legs are well placed and furnished with excellent feet, having that bold, frictionless way of going so desirable in a show horse.

In the entire lot there is that uniformity which can only be collected by competent judgment, and, although they are in the pink of condition, there is also no appearance of surplus flesh, their legs being as free from grossness as a Thoroughbred. One other horse that was included in the importation, the 2-year-old Kirkinner, Vol. 23, by Pretrechio (9067), and out of Lady Wallace, Vol. 23, and said by his late owner to be a colt of great promise, was lately sold to Mr. J. M. Boyd, M. P. P., Owen Sound, being the fifth horse purchased from the firm by Mr. Boyd. As Mr. Graham is favorably located in one of the best stock sections in Ontario, we cannot predict for him anything but that success will attend his enterprise, and with his constant personal application to the demands of the horse business, success with the kind of stock now on hand is assured. Mr. Graham also informed the writer that further importation would be made as the times demanded.

J. M. Perkins, Seed Merchant, Market St., Winnipeg, has issued a very full catalogue for 1901, containing a very complete list of vegetable and flower seeds, as well as of field roots, grasses, tree seeds, small fruits, novelties and specialties. He also handles the Planet Jr., seed drills and cultivators, and the Iron Age combined seed drill and wheel hoe. Send for this catalogue before ordering your seeds.

Edward L. Drewry, of Winnipeg, has issued a very handsome hanger, illustrating a prairie chicken shooting scene in Manitoba, engraved and lithographed from an original painting by Otto Wix. The two handsome pointers in the engraving are Alberta Joe and Bang Hill, acknowledged as two of the best dogs in America. Both have remarkable records as prizewinners at field trials, the subject is an interesting one, and the work excellently done.

The Forcing of Greenhouse Plants.

The profits of a Greenhouse depend largely upon forcing rapid growth and early maturity of everything in it. This is best done by the judicious use of Nitrate of Soda in combination with other agricultural chemicals. Study its properties, understand its uses. Full information and pamphlets free by addressing John A. Myers, 12-R John St., New York. Nitrate for sale by fertilizer dealers everywhere.

Write at once for List of Dealers.

CANADIAN PACIFIC RY. THE QUICKEST AND BEST ROUTE TO THE East and West

TORONTO, MONTREAL, VANCOUVER, SEATTLE.

Tourist Cars BOSTON, TORONTO, MONTREAL, VANCOUVER, AND SEATTLE. CALIFORNIA and other winter resorts.

The Veterinary Association of Manitoba.

Under the authority of Secs. 18, 19, 20, 22 and 26 of the Veterinary Association Act, 1880 (53 Vic., Chap. 60), the following persons only are entitled to practice as Veterinary Surgeons in the Province of Manitoba, or to collect fees for the service rendered as such:

- Alton, A. L. Sydney. Baker, G. P. Russell. Braund, F. J. Wawanesa. Brockton, G. E. Can William. Clark, J. L. Russell. Cook, W. S. Virden, Man. Coote, H. L. Brandon. Coxe, S. A. Brandon. Cruickshank, J. G. Deloraine. Dunn, J. Deloraine. Dunbar, W. A. Winnipeg. Elliott, H. James. Brandon. Fisher, J. F. Brandon. Fowler, J. Souris. Golley, J. S. Treberne. Graham, N. Dauphin. Hatton, J. Alexander. Harrison, W. Glenboro. Henderson, W. S. Carberry. Hilliard, W. A. Minnedosa. Hilton, G. Portage la Prairie. Hinman, W. J. Winnipeg. Hodgins, J. Newdale. Hopkins, A. G. Neepawa. Hurt, W. N. J. Belmont. Irwin, J. A. Stonewall. Johnston, H. J. McGregor. Lake, W. H. Miami. Lawson, R. Lake. Leslie, W. Melita. Lissett, R. C. Brandon, Man. Little, C. Winnipeg. Little, M. Pilot Mound. Little, W. Boissevain. Livingstone, A. M. Melita. McFadden, D. H. Emerson. Medill, J. J. Manitow. McKay, D. H. Brandon. McKenzie, G. A. Neepawa. McLaughry, E. A. Winnipeg. Martin, W. E. Winnipeg. Monteith, R. A. Killarney. Marshall, R. G. Griswold. Murray, G. H. Winnipeg. Robinson, F. E. Emerson. Roe, J. S. Neepawa. Rombough, M. R. Virden. Rowcroft, S. A. Birtle. Rutherford, J. G. Portage la Prairie. Rutledge, J. W. McGregor. Shultz, W. A. Stonewall. Smith, W. H. Carman. Smith, H. D. Winnipeg. Snider, J. H. Emerson. Stevenson, A. R. Weston. Stevenson, J. A. Carman. Swernerton, W. Carberry. Taylor, W. E. Portage la Prairie. Thompson, S. J. Carberry. Torrance, F. Winnipeg. Walden, J. Killarney. Walker, J. St. Minto. Weir, J. Roland. Williams, J. F. Winnipeg. Wilson, H. M. Glenboro. Young, M. H. Rapid City. Young, W. Manitow.

F. TORRANCE, REGISTRAR, WINNIPEG.

IT PAYS TO ADVERTISE IN THE FARMER'S ADVOCATE.

GOSSIP.

Anyone interested in the improvement of the stock industry of our Western plains could not employ a few hours more profitably than in inspecting the stock at J. E. Smith's well known Smithfield Farm, two miles from Brandon. The animals are comfortably quartered in two large barns, 50x112 and 36x72, which have been illustrated in the FARMER'S ADVOCATE. These barns are well ventilated and lighted, and everything is most convenient for feeding and watering the 150 head of cattle which they contain. The old reliable breeding bull, Lord Stanley II., first claims attention. He is a large, low-set red, with strong bone and great constitution, and a sure stock getter, well calculated to impress upon his offspring those qualities of health and stamina so requisite both in Manitoba and on the Western ranches. Lord Stanley II. is by Topman 1787, champion of the Dominion in 1890, and a prizewinner in the States last year. His dam, Roan Princess (imp.), was first at the Highland Society Show in Scotland, and was one of Russell's famous World's Fair herd. When we state that he is descended from such ancestors, nothing more need be said about his breeding. Most breeders change their herd bull every three years, but Mr. Smith, knowing a good thing when he sees it, naturally does not wish to part with a bull such as this. He has two herds: An older one, headed by Lord Stanley II., and a younger one, mostly the offspring of this bull, which are bred to imported Golden Measure (1897), bred by Wm. Duthie, Aberdeen, and imported by John Isaac, Golden Measure is by Golden Count, and out of Mistletoe 5th, by the celebrated Scottish Archer, and related to Brave Archer, bought for \$500 by Mr. Kelly, and taken to the United States, whither so many of our best animals find their way. He is a smooth red, straight as a line from shoulders to root of tail, and is one of the best of handlers. He is finer and neater than Lord Stanley II., and Stanley heifers, with their size and bone, when bred to Golden Measure produce calves that are hard to beat. At the sale in Chicago in December,

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. Impossible to produce scar or blower. Every bottle is warranted to give satisfaction. Price \$1.50 per bottle. Sold by Druggists, or sent by Express, charges paid, with full directions for its use. Send for free descriptive circulars. THE LAWRENCE-WILLIAMS CO., Toronto, Ont.

N. P. Clark sold for \$650 a bull sired by Golden Measure while the property of Mr. Isaac. At the Isaac dispersion sale, December 18th, a heifer from Golden Measure brought \$1,000, the second highest price animal at the sale. At the same sale Mr. Smith bought three fine imported cows, two of which have since had calves. Space does not permit a description of the cows. Suffice it to say that they are a good, thrifty lot, get plenty of exercise, and consequently are always healthy and good breeders. Mr. Smith never makes the mistake of keeping his cows so fat that they are unfit for breeding a policy that does not pay, and we understand that he is in the business for profit as well as pleasure. The calves are coming every day, and a grand lot they are. Most of the cattle are summered out at the Bessford Farm, but the Stanley heifers and Golden Measure are always at Brandon. Mr. Smith's Clydesdale breeding stud is at Bessford, and they occupy as high a place in their class as do his Shorthorns. His imported stallion, Prince Charles, took first at Winnipeg and Brandon last year.

David Maxwell & Sons, ST. MARY'S, ONT.

STEEL ROLLER BEARINGS IMPROVED STEEL FRAME. And combined Foot and Lever Drive, improvements you will not find on other churns. Do you want the best? Then don't purchase until you see it. Sold by the leading wholesale houses in the Dominion.

CANADIAN DAIRY SUPPLY COMPANY, 236 KING ST., WINNIPEG, MAN.

LATELY IMPORTED A FRESH LOT OF CLYDESDALE STALLIONS. Comprising sons and grandsons of many of the most noted Scotch showyard winners and sires, all in the pink of condition without surplus flesh, and personally selected to meet the best Canadian markets, having, without exception, the best of bone, hair, feet, and action, coupled with true Clyde character. I will make further importations as the times demand. Inspection invited. Prices consistent with quality.

ROBERT GRAHAM, Stouffville Station, G. T. R., and telegraph office. RINGWOOD P. O., ONT.

GREAT SHORTHORN SALE

R. & S. NICHOLSON, OF SYLVAN, AND W. H. TAYLOR, OF PARKHILL,

Wednesday, March 20, 1901,

40 Head of Shorthorns 27 FEMALES 13 BULLS.

The most of them have from 1 to 6 crosses from bulls that have won 1st at the Toronto Industrial Exhibition. We are satisfied that no better lot of home bred cattle have been offered for a number of years. All young, and nothing doubtful in the lot. Terms: 12 months credit on approved paper. LOCATION: 5 MILES SOUTH-WEST OF PARKHILL STATION ON THE G.T.R. Trains will meet train on evening before and morning of sale. Catalogue sent on application.

CAPT. T. E. ROBSON, AUCTIONEER, ILBERTON. R. & S. NICHOLSON, SYLVAN P.O., ONT.

Hackney Association.

The Canadian Hackney Association held their 9th annual meeting in Toronto, Feb. 16, 1901. President Robt. Miller, Stouffville, conducted the meeting. Secretary Treasurer Henry Wade reported 32 registrations during the year, which brings the total number up to 200. The Association has a cash balance of \$26.81.

The following officers were elected: President, Robert Miller, Stouffville; First Vice-President, Thomas Graham, Clarendon; Second Vice-President, John Holderness, Toronto; Vice-Presidents for the Provinces: Robert Davis, Toronto; J. A. Cochrane, Quebec; A. M. Rawlinson, Calgary; J. McMillan, Brandon; J. R. Frink, St. John; N. R. Directors: Dr. Andrew Smith, Toronto; R. Bond, Toronto; Robt. Beith, Bowmanville; J. K. Macdonald, Toronto; George Pepper, Toronto; D. B. Shippson, Bowmanville; E. C. H. Tisdale, Beaverton; William Graham, Clarendon; H. N. Crossley, Rosseau; Delegates: To Industrial Exhibition, Robert Beith and George Pepper; Western Fair, Adam Beck, and E. C. Attrill, Goderich; Ottawa Exhibition, R. Beith; Montreal, James Cochrane, Hillhurst; Woodbridge, John Holderness, R. Bond and J. K. Macdonald; Horse Breeders' Association, J. K. Macdonald, R. Beith; Secretary Treasurer, Henry Wade.

Recommended Judges: A. Main, Indian Neck, Long Island; R. Gibson, Delaware, Ont.; Hon. York, Fairfax, Aldie, Va.; H. K. Bloodgood, New York; Ed. Wain, Chestnut Hill, Pa.; Jas. Warbeck, South Newbury, Vt.

Grants of \$50 were made to the Canadian Horse Show and Toronto Industrial, to be allotted as the directors see fit. It was decided to memorialize the Toronto Industrial, asking them to give more liberal prizes in the Hackney classes.

As a result of an invitation from the American Hackney Association, asking the Canadian breeders to co-operate with them, Messrs. Robt. Beith, Robt. Miller and Geo. Pepper were appointed a committee to confer with the American Society as to joining with them in registering horses. The opinion was expressed by some that the amalgamation of the stud-books would mean the extinction of the Canadian Society, while others held a more moderate view, and believed that such a movement would assist the two rather weak Associations onto a more successful plane, and thus promote the interests of the Hackney breed of horses in America.

Saddle and Carriage Horse Breeders' Society.

The second annual meeting of the Saddle and Carriage Horse Breeders' Society was held in Toronto, February 6th, 1901, with a good attendance of members. President S. B. Fuller, Woodstock, occupied the chair. President Fuller, in his address, spoke of the year 1900 as having been the best for the horse business in years. He said we need more English and Irish mares and stallions, as we used to have. Canadian horses have proved their superiority in South Africa. The Government, in Mr. Fuller's opinion, should assist this industry. Service stallions should be licensed. Over 100,000 horses and mules have been purchased by Great Britain in the United States for South Africa. Mr. Fuller contended that some course should be taken to secure at least a portion of this trade.

Mr. Geo. Pepper moved that a prize of \$50 be given to the Spring Horse Show for the champion harness horse, mare or gelding, and stated that Mr. Walter Harland Smith would give half the prize, and that he would give the other half. Mr. Pepper also moved that the society should give \$50 to the Toronto Industrial Exhibition for the champion saddle horse, mare or gelding. In either case these prizes are open only to first-prize winners at this or previous recognized horse shows. This was carried, as also were the following resolutions:

That this meeting has heard with satisfaction that it is the intention of the Government to introduce a bill to be known as the Stallion Lien Act.

That this society memorialize the Toronto Industrial Exhibition Association, and ask them to reconstruct their prize list in as far as it affects the saddle horse, carriage horse and hunters, and that they increase their prizes in proportion to the amount given at other first-class exhibitions and by other associations.

That the Hon. John Dryden, Minister of Agriculture for Ontario, be asked to introduce legislation at this session for the purpose of providing for the licensing and inspection of stallions.

The election of officers resulted as follows: President, S. B. Fuller, Woodstock (re-elected); First Vice-President, W. Harland Smith; Second Vice-President, Abd. O. R. Sheppard; Secretary-Treasurer, H. Wade; Corresponding Secretary, H. J. P. Good.

Directors: W. C. Brown, Meadowdale; T. H. McCartney, Thamesford; Dr. J. T. Gallanough, Thornhill; D. T. Lowe, Brampton; Wm. Graham, Clarendon; Dr. Andrew Smith, E. W. Cox, George Pepper, Wm. Hendrie, Jr. (Hamilton), Thos. A. Crowe.

Mr. J. Henderson, representing the Pan-American Exposition, pointed out that no duty will be charged horses coming from Canada, as the Pan-American will be practically a bonded warehouse. He urged this Association to have their members exhibit. It was pointed out that the Canadian Government will bear the transportation charges of horses going from Canada to that Show.

The Dominion Government has appointed Mr. William Hutchison, ex-M. P., Ottawa, as the Canadian Commissioner to the Pan-American Exposition. Mr. Hutchison is President of the Central Canada Fair Association, and has made a special study of fair management and the possibilities connected therewith.

LIVE STOCK ASSOCIATION MEETINGS.

The annual meeting of the Dominion Swine Breeders' Association will be held in the Queen's Hotel, Toronto, on February 21st, at 10 a. m.; the meeting of the Dominion Sheep Breeders' Association, in the Palmer House, at 10 a. m., on the 22nd. The annual meeting of the Dominion Cattle Breeders' Association will be held in the City Hall, Guelph, on March 1st, at 10 a. m.

EVERGREENS. Have your Nursery grown for wind breaks, ornament and shade. Prepared \$1 to \$10 per 100. Write at once for Free Catalogue and Price Sheet. Local agents wanted. D. Hill, Specialist, Dundee, Ill.

SKUNK. I pay highest prices for all kinds of Raw Furs and Ginseng Roots. Write for price list. There is no duty on Raw Furs and Ginseng. J. I. GLEED, EAST AURORA, N. Y.

FLEMING'S LUMP JAW CURE. Any Lump Cured. If you have a real or suspected case of Lump Jaw among your cattle cure it at once with Fleming's Lump Jaw Cure. Don't take chances on a disease that always proves fatal if neglected. Don't waste money on experiments; use the remedy that invariably cures. One bottle cures one severe or two or three ordinary cases. Cures any lump or enlargement on cattle or horses.

Argyle, Ont., April 3rd, 1900. Sirs.—Enclosed please find \$2; send me a bottle of your Lump Jaw Cure. I got a bottle from you last fall and it gave good satisfaction. ARCHIE McFARLANE.

Price \$2, or three bottles for \$5. At drug stores or sent by mail prepaid. Money promptly refunded if it ever fails. FREE—Our Illustrated Pamphlet to readers of this paper. FLEMING BROS., Chemists, Room J, 58 Bay Street, TORONTO, Ont.

NO SPAVINS. The worst possible Spavin can be cured in 45 minutes. Curbs, Splints and Ringbones just as quick. Not painful and never has failed. Detailed information about this new method sent free to horse owners. Write to-day. Ask for Pamphlet No. 1. FLEMING BROS., 58 Bay St., Toronto, Ont.

Trees! Trees! Trees! We have a full line of Fruit and Ornamental Trees for spring, 1901, at lowest possible prices. Headquarters for packing dealers' orders. Farmers wishing to buy first-class stock absolutely first hand and without paying commission to agents, should write to us at once for a catalogue and price list.

Don't wait until the last minute, as you will be disappointed. Place orders early and secure the varieties you want. Correspondence solicited. Winona Nursery Co., WINONA, ONT.

EWING'S SELECTED FARM AND GARDEN SEEDS. are thoroughly reliable, and better cannot be found. We mail FREE our Illustrated Seed Catalogue for 1901, to all sending us their addresses. Our assortment is complete, and includes full lines of Plants, Flowering Bulbs, Shrubs, Tools, etc., besides all varieties of seeds for farm or garden, and Seed Grain. William Ewing & Co'y, SEED MERCHANTS, 142 MCGILL ST., MONTREAL.

UP WITH THE TIMES. Progressive Cheese and Butter makers use WINDSOR SALT, because they know it produces a better article, which brings the highest price. THE Windsor Salt Co., Limited, WINDSOR, - ONT.

PLEASE MENTION FARMER'S ADVOCATE.

GRAND'S REPOSITORY



53 to 59 Adelaide St. W., Toronto, Can. Auction Sales every Tuesday and Friday at 11 o'clock.

IMPORTANT AUCTION SALE THOROUGHBREDS, Tuesday, March 12th, at 11 o'clock.

By instructions from MR. N. DYMENT, Barrie, Ont., and MR. JOS. DUGGAN, Toronto, we will sell, without reserve, on the above date, a splendid collection of

Stallions and Mares. ALSO THE FOLLOWING VALUABLE

Thoroughbred Stallions:

Imported Sentinel—Seal brown, small star, 9 years, 15.3 hands. By Hawkeye (by Uncas, out of Jennie Howlett, dam of Chitalbob). Dam Fair Rent, by Wisdcm, sire of Sir Hugo, winner of the Derby. A grand young horse of fine quality, plenty of bone, compact, short coupled, lots of substance, beautiful conformation and excellent action. Purchased specially for Canada from Dr. Haslewood, Buxton, England, by

MAJOR DENT,

of Malton, England, whose judgment is famous at the leading agricultural shows in England, and who was appointed by the War Office to purchase remounts in Canada for the South African war. In purchasing Sentinel for service in Canada, Major Dent says: "I have not endeavored to buy a horse that is only fit for the showing himself, but one whose produce has been winning prizes regularly in the best agricultural districts in England in strong competition. I consider this type of horse the best to breed to, from a commercial standpoint, as his get from the ordinary mares I have seen in Canada will be easily sold for remounts, and, in any case, are the most salable class for riding, driving and general use. Sentinel has proved himself to be a wonderfully successful sire. All his foals are extra large, strong, compact, with the remarkable beauty of their sire in every case. No fault can be found with the conformation or substance of any of the get of this grand young sire, whose three-year-olds have all outgrown him."

Homecrest, No. 12498—Chestnut, foaled 1897. American Stud Book, Vol. 7, page 160. 16.1 hands. Bred by Mr. Frank M. Ware, New York.

Consigned by Mr. Frank M. Ware, New York, as a specially desirable sire on account of his size, substance, splendid breeding and graceful action. When put into training he was valued at \$10,000.00, but, on account of growing so fast, it was found he would not develop speed enough to insure profit for this year, and the owner was persuaded to sell him as a sire. He shows any amount of substance, short, strong back, powerful quarters, and bred on the best producing lines in the world. Sired by Cheviot, by Traducer, out of Italia; dam Carmen, by Fiddlesticks, out of Camille. Extended tabulated pedigree will be found in catalogue, which may be had on application. Before being put into training, Homecrest was fired in front as a precaution to save his tendons, but is perfectly sound.

Catalogues of all the above may be had on application.

50 HORSES

Of all classes will also be sold on the same day, including first-class well-broken drivers, saddle horses, carriage pairs, general purpose horses, etc. And on the following day,

WEDNESDAY, MARCH 13TH, AT 11 O'CLOCK, 100 New and Second-hand Buggies and Carriages

Of every description will positively be sold, regardless of cost, to make room for new consignments.

WALTER HARLAND SMITH, AUCTIONEER AND PROPRIETOR.

CLYDESDALE STALLIONS FOR SALE.

Fourth consignment will arrive about February 15th, 1901.

A High-class Lot, of Good Size and Quality, and of Most Fashionable Breeding.

Parties desirous of securing high-class horses will do well to see these or write us before purchasing.

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

The Horses that made Janesville Famous.

For twenty years past Janesville has been associated with all that was high-class in the line of horses, and the name of "GALBRAITH" is familiar as a household word to every horse breeder of any note on this continent. The undersigned respectfully invites an inspection of his present stock of

CLYDESDALES,

which are believed to be fully equal to the best ever maintained during the palmy days of the business. Ample size, superior breeding, great individuality, moderate prices, and the best of guarantees, are among the inducements offered buyers. An assortment of Percherons, Shires, Suffolks and Hackneys also on hand. The only place where the best of all the breeds can be compared alongside each other. Prominent prizewinners at the recent International Live Stock Show at Chicago. Send for catalogue.

ALEX. GALBRAITH, JANESVILLE, WISCONSIN.



TROUT CREEK HERD OF SHORTHORNS.

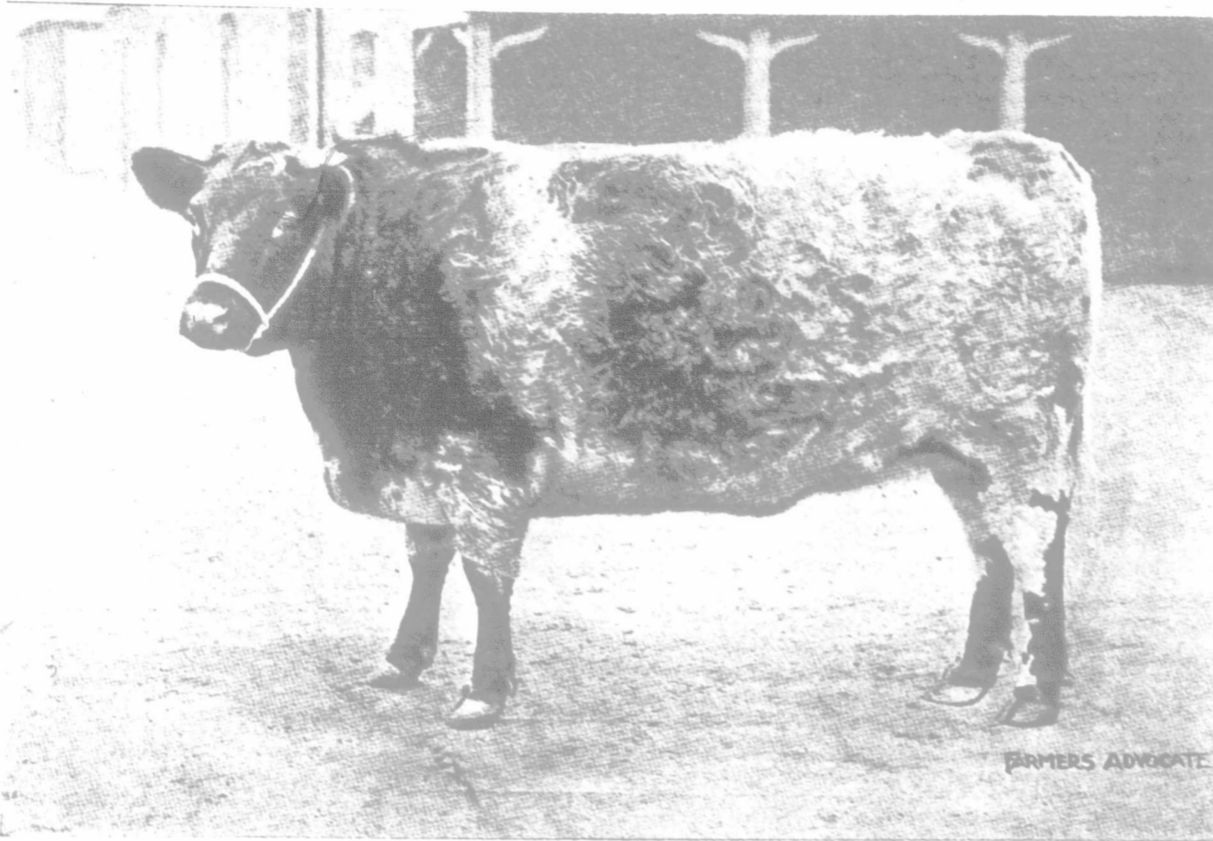
Since our Chicago sale we have imported sixty-two head, including some Royal winners; they were pronounced in Scotland superior to past importations. We try to import the best, believing that this is one of the ways to assist in improving the breed on this side of the water. Being thoroughly convinced, also, that a bull of the right sort is even more than half the herd, we have decided to keep the following choice ones:

Imp. Lord Banff,

Bred by A. Watson; of the Campbell Bessie family.

Imp. Consul,

Bred by J. D. Fletcher; of the Campbell Claret family. Consul was awarded first at Edinburgh, first and champion at Provincial Union, first and champion at Creiff, and second at the Highland. His sire, Watchword, bred by Wm. Duthie, was first at the Highland in 1885 and 1886, and got by Scottish Archer. Watchfire, by Watchword, was first at the Highland, 1897. Consul is the highest-priced bull imported to Canada.



CICELY.

Bred by Her Majesty the Queen; undefeated in her class and many times champion; imported by W. D. Flatt.

Imp. Silver Mist,

Bred by Wm. Duthie; of the famous Missie family. He had many friends for first choice at Messrs. Marr and Duthie's sale. Mr. Beck, representing the Prince of Wales, made next to last bid.

Imp. Wanderer's Last,

Bred by W. S. Marr; also of the Missie family. Is the last calf got by that renowned Cruickshank bull, Wanderer. Mr. Marr considers this youngster very promising.

We keep in our herd a choice lot of both imported and Canadian cattle, of both sexes, from which to make selections. Personal inspection invited. Parties desiring to see the herd will be met on arrival of trains at Hamilton if notice is given. Visitors always welcome.

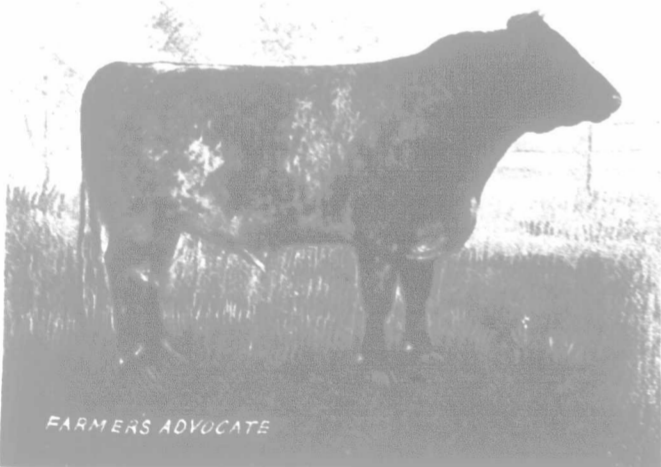
Hamilton is a city of over 50,000 inhabitants, located on main line of Grand Trunk Railway, between Chicago and Buffalo; also connected by Canadian Pacific Railway and Michigan Central Railway branch lines.

W. D. FLATT,

378 Hess St. South.

HAMILTON, ONT.

Jas. Smith, Manager.



FARMERS ADVOCATE

IMP. FASHION'S FAVORITE.

FOR SALE — Three Beautifully-bred Clydesdale Stallions

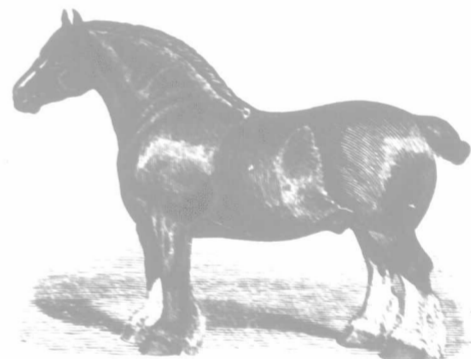
Royal Erskine (imp.) [2529] (10431)
Brown; foaled May 3, 1896. Bred by Chas. Smith, Jr., Incheorsie, Huntly, Scotland.

Dam Rosebella (12221)	Sire Prince of Erskine (9647)	W. S. Park
2 Rose of Incheorsie (2825)	Lord Montrose (2723)	J. McElbion
3 Susie of Incheorsie (2822)	Johny (114)	Wm. Ketter
	Black Samson (62)	A. K. Leitch

ROYAL ERSKINE is a grand young horse, and won Second at both Toronto and London in 1899 against strong competition, when in very thin condition, being just off the ship. PRINCE OF ERSKINE (9647), by Prince of Albion, dam Halton Beauty (5657), by the great Barnley (222).

LORD MONTROSE (2723), by Knight Errant (483); dam Lady Jane (424), by Model Prince (125).

JOHNNY (114), alias Nonsuch, alias Young Emperor, alias Rantin Johnny, was a prize-winner at the Highland Society's Show at Glasgow in 1875.



Balmedie Cameron Highlander (imp.) [2562] [Vol. 21, p. 134 S.]

IMPORTED IN 1899 BY H. CARGILL & SON, CARGILL, ONT.
Dark bay, white star on face, hind feet and ankles white; foaled April 7, 1888. Bred by W. H. Lumsden, of Balmedie, Scotland.

Dam Balmedie Doris (13511)	Sire Royalist (6242)	Jas. Lockhart
2 Lady Dorothy (2688)	Balmedie Prince (434)	J. Cranston
3 Maggie of Kirminnoch (2827)	Barnley (222)	Sir W. Stirling Maxwell
4 Jean of Kirminnoch (2826)	Strathelyde (1328)	J. Melrose
5 Cairn Tom (117)	Young Conqueror (357)	Jas. Smith
	Cairn Tom (117)	Mr. Cochrane

BALMEDIÉ DORIS won the following prizes; only times shown: 1886, Second Prize as a three-year-old at Royal Northern, Aberdeenshire, 1897. Second Prize as yearling mare at Royal Northern, Aberdeen, 1898. Second Prize as mare with foal at foot, at Royal Northern, Aberdeen. LADY DOROTHY won the following prizes, and was one of the best mares left by that famous stallion, Barnley (222): 1891, Glasgow Show, Fourth Prize. Royal Northern, Aberdeen, First and Special for best mare in yard. 1892, Royal Northern, Aberdeen, First with foal at foot. Highland and Agricultural Show at Inverness, First Prize. 1893, Highland and Agricultural Show at Edinburgh, Silver Medal. 1894, Highland and Agricultural Show at Aberdeen, Third Prize. 1895, Farmington Show, First Prize and Special for best female. Inverurie Show, First Prize and Special for best female. ROYALIST (6242), sire Barnley (222); dam Princess (6255), by Prince of Wales (673), is one of the Champion Clydesdale Stallions of the day, both in the show-yard and at the stud, his progeny having taken First Prizes at the Highland and Agricultural Society, Royal English, and other leading shows. Royalist, in 1887, as a one-year-old colt, gained Third Prize at Kilmarnock; First Prize and Cup at Royal Northern Summer Show, Aberdeen, and Third Prize at Highland Society's Show at Perth. In 1888, as a two-year-old colt, he gained First and Challenge Cup at Inverurie Show, First Prize and Cup at Royal Northern Summer Show, Aberdeen. In 1890, as a three-year-old stallion, he gained First Prize at Royal Northern Summer Show, Aberdeen, and Second Prize at Highland Society's Show at Melrose; and in 1893, when seven years old, he gained First Prize and Challenge Cup as champion male at the Jubilee Show of the Royal Northern Society, Aberdeen.

BALMEDIÉ PRINCE (634), by Prince of Wales (673).

Royal Carruchan (imp.) [2561] (Vol. 21, p. 172, S.)

IMPORTED IN 1899 BY H. CARGILL & SON, CARGILL, ONT.
Bay, stripe on face, off fore and hind feet white; foaled May 2, 1888. Bred by David Walker, Coullie, Udy, Aberdeenshire, Scotland.

Dam Jess of Coullie (13647)	Sire Prince of Carruchan (8151)	J. McCaughey
2 Balfarg Jess (295)	Mount Royal (8963)	D. Mitchell
3 Winky of Kingsdale (2648)	Corsair (419)	Sir W. Stirling Maxwell
4 Jess 2nd (133)	Scottman (260)	J. Meiklen
5 Jess (758)	Stirling Tom (133)	R. Mounbray
6 Mettle (30)	Sir Colin Campbell (758)	R. Logan
	Stirlingshire Champion (30)	J. Hardie

PRINCE OF CARRUCHAN, by Prince of Wales, was First at Highland Agricultural Society Show at Dundee, as a two-year-old. First and Champion at the Highland Society, as a three-year-old, at Stirling. First as an aged horse at the Highland Society Show at Edinburgh; also winner of the Cawdor Cup twice at the Glasgow Exhibition.

MOUNT ROYAL won the following prizes: 1888, First at Perth. 1889, First at Turrit. 1890, First and Champion for best entire, any age. Royal Northern, Aberdeen. First and Highland Society's Medal for best entire, any age. Turrit. First and Challenge Cup for best animal, male or female, Inverurie. First and Lord Aberdeen's Special Prize for best entire colt, Aberdeen. A. H. Commented, Highland Society's Show, Dundee, 1891. First and Champion Cup for best entire, any age. Royal Northern, Aberdeen. First at Royal Northern Summer Show, Aberdeen. Second to Prince of Carruchan at Highland Society's Show, Stirling. 1892, First, Royal Northern Summer Show, Aberdeen. Fourth, Highland Society's Show, Inverness, 1893. Second, Glasgow, as sire of five yearlings. Kirminnoch Society's Premium horse, 1894. Kirminnoch Society's Premium horse, 1895. Short list of five for Glasgow Premium. Sekirk and Galashie Society's Premium horse, 1896. Windygates Society's Premium horse. His stock has gained First Prizes at Huntly, Keith, Banff, Turrit, Insh, Kean-Thumot, Inverurie, Fyvie, Aberdeen, Glasgow, Edinburgh, Dundee, East Kildrilloch, Kirmintulloch, Girvin, Kirminnoch, Montrose, Forfar, Arbroath, etc. He is sire of Royal Garry (894), the Cawdor Cup winner in 1886 and 1886.

FOR SALE: Three imp. Yearling Bulls; Seven imp. in-dam Bull Calves.

Bred by Messrs. Duthie and Marr, from females imported by us, and sired by the best bulls in Scotland. All are excellently bred and first-class individuals. We also offer any reasonable number of females, either in calf or with calves at foot; all ages. Herd headed by the imported bulls, Golden Drop Victor and Prince Bosquet.

Also the Standard-bred Trotting Stallion, PAVON (30760) A. T. R.

CATALOGUE FREE.

Interested, come and see us or write:

H. CARGILL & SON, CARGILL, ONT., CAN.

Annual Meeting Canadian Holstein-Friesian Breeders' Association.

The Canadian Holstein-Friesian Cattle Breeders' Association held their annual meeting in Toronto, on Feb. 5th, 1901. Pres. T. W. Charlton (St. George) presided until the new President was elected. Secretary G. W. Clemens recorded the minutes and reported his work for the year.

The report of the Secretary-Treasurer showed the neat cash balance on hand of \$316.14. During the past year, 67 cattle have been registered, as against 38 for the year previous, and 29 transfers, as against 13 for the year previous. Thirty-one new members have joined during the year.

Election of officers: President, C. J. Gilroy, Glen Buell. First Vice-Pres., A. Gifford, Meaford. Second Vice-Pres., Jas. Rettie, Norwich. Third Vice-Pres., S. R. Beck, South Cayuga. Fourth Vice-Pres., R. S. Stevenson, Ancaster.

Directors: T. B. Carlaw, Warkworth; A. C. Hallman, New Dundee; Matt. Richardson, Caledonia, and Wm. Armstrong, Locust Hill. Secretary, G. W. Clemens, St. George. Auditors—Wm. Suhring, Sebringville, and J. H. Patten, Paris.

Recommended Judges—Toronto Exhibition, R. S. Stevenson or H. Bollert; London, A. C. Hallman or T. W. Charlton; Ottawa, H. Bollert or W. Shunk; Brantford, T. W. Charlton.

Delegates to Fair Boards—Toronto Industrial, Wm. Shunk, Sherwood, and W. E. Ellis, Toronto; London, G. W. Clemens, St. George, and H. Bollert, Cassel; Brandon and Winnipeg, Jas. Glennie, Longburn; Ottawa, C. J. Gilroy and Jas. Fletcher, Oxford Mills; Kingston, R. Honey, Warkworth; Brantford, T. W. Charlton; Halifax and St. John's, S. A. Logan, Amherst, N. S.

Resolutions Adopted.—That the President and Secretary be delegates to the Dominion Cattle Breeders' Association.

That a member of a Dairy Cattle Breeders' Association be appointed on the Executive Committee of the Dominion Cattle Breeders' Association as President or Vice-President.

That all animals be registered in the name of the first owner.

That \$100 be appropriated to Toronto Industrial to assist in increasing interest in the Holstein-Friesian cattle, as prescribed by the Association through its representatives.

That the rule of last year be continued during this year, in allowing animals from one to three years old to be admitted to the record at double the regular fee.

That \$100 be donated to the Ontario Provincial Fair for tests, and \$25 to each of the following exhibitions: Halifax, N. S.; St. John, N. B.; Brandon, Man., and New Westminster, B. C.

That the Secretary have minutes of this meeting printed and sent to each member of the Association before March 15th, 1901.

That the President and Secretary memorialize the Dominion Government, asking for a railway commission.

That the one judge system be continued.

That appropriations to public milk tests at Toronto Industrial and all other shows, except Provincial Winter Fair, be discontinued.

That a Canadian Record of Merit similar to the American Advanced Registry be instituted.

That no special prizes be awarded to Record of Merit cows this year, because of the extra expense incurred by the institution of the Record of Merit.

That cows owned and tested by Canadians and recorded in the American Advanced Registry, and that have come up to the standard of the Canadian Record of Merit, be admitted into the Record of Merit without another test.

The committee appointed to formulate by law for a system of advanced registry met at St. George, Ont., Nov. 14, 1900.

The following are the rules and regulations to govern the Record of Merit:

Preamble.

We, the Holstein-Friesian Association of Canada, have declared it advisable and for the best interests of the breed to inaugurate a system of registration of performance, to be known as "The Canadian Holstein-Friesian Record of Merit."

Rule I.

The Secretary of the Holstein-Friesian Association shall have charge of this Record. Under the general supervision and direction of the Board, composed of three members elected by and from the Board of Officers, he shall prepare and publish blank forms and circulars needed in carrying this system into effect; receive and attend to all applications for this record; issue all certificates of merit over his signature and the seal of the association; shall edit and publish such publications as are required by the Board of Officers to secure the efficiency and success of this system. Applicants shall apply to the Secretary, who will request Superintendent of Agricultural College or Experiment Station to appoint suitable persons to conduct all tests as applied for.

The Secretary shall only recognize tests made by capable men, appointed by Agricultural Colleges or Experiment Stations. He shall make a full report of his work to the Board of Officers whenever they require it, and at least once in each year at date of annual meeting.

Rule II.

For purpose of convenience in describing cattle offered for entry in this record, they shall be classified as follows:—All animals from two to three years of age, in a class to be known as the two-year-old form.

All animals from three to four years of age, in a class to be known as the three-year-old form.

All animals from four to five years of age, in a class to be known as the four-year-old form.

All animals above five years of age, in a class to be known as the full-age form.

Rule III.

All animals to be eligible for this Record must be registered in the name of the first owner, and the name of the animal must be registered in the name of the first owner, and the age in years must be registered.

What Shall We Eat

To Keep Healthy and Strong?

A healthy appetite and common sense are excellent guides to follow in matters of diet, and a mixed diet of grains, fruits and meats is undoubtedly the best, in spite of the claims made by vegetarians and food cranks generally.

As compared with grains and vegetables, meat furnishes the most nutriment in a highly concentrated form, and is digested and assimilated more quickly than vegetables or grains.

Dr. Julius Renousson on this subject says: Nervous persons, people run down in health and of low vitality, should eat plenty of meat. If the digestion is too feeble at first it may be easily strengthened by the regular use of Stuart's Dyspepsia Tablets after each meal. Two of these excellent tablets taken after dinner will digest several thousand grains of meat, eggs or other animal food in three or four hours, while the malt diastase also contained in Stuart's Tablets cause the perfect digestion of starchy foods, like potatoes, bread, etc., and no matter how weak the stomach may be, no trouble will be experienced if a regular practice is made of using Stuart's Dyspepsia Tablets, because they supply the pepsin and diastase so necessary to perfect digestion, and any form of indigestion and stomach trouble, except cancer of the stomach, will be overcome by their daily use.

That large class of people who come under the head of nervous dyspeptics should eat plenty of meat, and insure its complete digestion by the systematic use of a safe, harmless digestive medicine like Stuart's Dyspepsia Tablets, composed of the natural digestive principles, peptones and diastase, which actually perform the work of digestion and give the abused stomach a chance to rest and to furnish the body and brain with the necessary nutriment. Cheap cathartic medicines masquerading under the name of dyspepsia cures are useless for relief or cure of indigestion, because they have absolutely no effect upon the actual digestion of food.

Dyspepsia in all its forms is simply a failure of the stomach to digest food, and the sensible way to solve the riddle and cure the indigestion is to make daily use at meal time of a safe preparation which is endorsed by the medical profession and known to contain active digestive principles, and all this can truly be said of Stuart's Dyspepsia Tablets.

All druggists throughout the United States, Canada and Great Britain sell them at the uniform price of fifty cents for full treatment.—Advt.

Rule IV.

The Secretary shall, without formal application, enter in the Record of Merit all bulls which have four or more daughters which have made officially authenticated butter records and which have been recorded in the Record of Merit.

Rule V.

Each and every test must be for a period of seven days.

A cow in the two-year-old form will be required to produce eight pounds of butter-fat.

A cow in the three-year-old form will be required to produce ten pounds of butter-fat.

A cow in the four-year-old form will be required to produce eleven and a half pounds of butter-fat.

A cow in the full-age form will be required to produce thirteen pounds of butter-fat.

In making each and every such record, the cow shall be milked dry at its commencement, and the close shall not extend beyond the number of days reported, reckoned at twenty-four hours each.

In reporting each and every record, the date of calving should be given, the age of cow at such date, the date of commencement of record, the date of close of record, and the number of pounds of butter-fat produced.

Every record shall be sworn to by each and every person assisting in making it, including in every case the owner of the animal. Such affidavits shall set forth that the record, or records, were made in accordance with these rules, and that they are true in each and every particular, to the best knowledge and belief of the subscribers thereto, and shall be made before a Commissioner, Notary Public or Justice of the Peace. In case an abnormal test is reported, the Secretary shall immediately request the Superintendent of Agricultural College or Experiment Station to send another man to conduct a new test, which shall extend for a period of twenty-four hours, and the expense of such re-test shall be borne by this Association.

Rule VI.

The applicant shall pay the expenses of the person sent by the Agricultural College or Experiment Station to conduct the test, except as hereinbefore provided.

The Certificate of Record of Merit shall be issued free of charge.

Rule VII.

These rules may be altered or amended by an affirmative vote of a majority of the members at their annual meetings, previous notice of proposal to make such alteration or amendment having been given, in accordance with the provisions of the by-laws of this Association, thirty days before the annual meeting.

The publication of this Record of Merit shall be embodied in the publication of the herd-book.

SUCCESSFUL HEREFORD SALES.

The 20th century opening sales of Hereford cattle, at Kansas City, Mo., the last week in January, scored a brilliant success, nearly 200 head selling during the week at an average of nearly \$300. There were no \$1,000 bulls sold, but prices were uniformly good. The world's record price for a Hereford female, of \$3,700, was made by the 3-year-old Carnation, sold by C. M. Givens, Bunker Hill, Ind., to J. C. Adams, Montgomery, Ill. The highest priced bull was the 10-months-old Duke of Sunrise, sold by J. C. Adams to C. M. Givens, for \$1,000. J. F. B. Sotham, Chillicothe, Mo., made the highest average, his 30 head selling for \$425 each, and his highest priced yearling Hereford, 1 year and 10 months old, for \$1,000 to C. M. Givens, the breeder and owner of the champion bull Duke.

PLEASE MENTION FARMER'S ADVOCATE.

The Breed THAT FIRST Hillhurst Famous

FIVE GRAND YOUNG SHORTHORN BULLS FOR SALE, 9 to 12 months registered; bred from milking strains; hardy and active, having been reared in a natural manner on pasture. Prices moderate. Special inducements to clubs. A choice lot.

SHROPSHIRE

Ram and Ewe Lambs, by imported rams of Mansell's and Harding's breeding. HAMPSHIRE, BLUE GOLDEN-FLESHED, Ram Lambs all sold. Next crop due January, 1901. Ready for service in August.

M. H. COCHRANE,

HILLHURST STATION, -om COMPTON CO., P. Q. 17 miles from Montreal, on Portland Div. Grand Trunk Ry.; 12 miles from Lennoxville, C. P. R.

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

IMPORTERS AND BREEDERS OF Scotch Shorthorns and Shropshire Sheep

OFFER FOR SALE: 12 Imported bulls, 12 mos. to 2 yrs. old. 5 " " " 9 to 12 mos. old. 30 " " " cows, 3 to 6 yrs. old. 15 " " " heifers, 2 yrs. old. 5 " " " 1 yr. old. 6 Home-bred bulls, 9 to 18 mos. old. 20 " " " heifers, 1, 2 and 3 yrs.

Our imported bulls are now getting in good shape. All our heifers of suitable age are bred to Pure Gold (imp.), by Cyprus, and Scotland's Pride (imp.) a Cruickshank Clipper, by Star of Morning. Catalogues on application. All our imp. cattle were registered in the American Herd Book before the \$100.00 fee for recording was put on.

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

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.



T. DOUGLAS & SONS, STRATHROY, ONT. BREEDERS OF..

Scotch Shorthorns

100 HEAD TO SELECT FROM.

Offer for sale 20 young bulls, and cows and heifers of all ages, of the most approved breeding, bred to (imp.) Diamond Jubilee - 28841 - at head of herd. Farm one mile north of town, on

J. & W. B. Watt, SALEM, ONT., BREEDERS

Clydesdale horses, Scotch Shorthorn cattle, Leicester and Oxford sheep, Berkshire pigs.

Our SHORTHORN herd was founded over 30 years ago, and contains such tribes as the Village Ruds, Matchless, Missies, Mildreds, Stamfords and English Lady, upon which we have employed such bulls as Broomston Hero 324, Young Abbotshorn 6236, Challenge 2003, Perfection 9100, Lord Lansdowne (imp.) 2712, Clan Stuart 1481, Canada 1938, Siltton Chief 1700, Royal Sailor (imp.) 1859, Royal George 25313, Clippie King 16293 and Judge 23419, all of which have been first-prize winners wherever shown. Royal Victor 34881 and Royal Wonder 34682, by Royal Sailor (imp.), and out of English Lady and Mildred dams, now head the herd, assisted by Koon Cloud 31317, by Lord Gloster 2266, and out of M. Lady 2192, a descendant of the Buckingham family. We are now offering young bulls, cows and heifers for sale, of Scotch type.

Farm 2 miles from Elora Station, G. T. R. and C. P. R., 15 miles north of Guelph.

Advertisement for W. C. Edwards and Company, Importers and Breeders of Ayrshires, Jerseys, Shropshires, Berkshires, and Scotch Shorthorns and Shropshires. Includes illustrations of cows and sheep.

Our excellent aged herd of Ayrshires is headed by our noted imported bull Cyclone. Tam Glen heads the young herd, and Eawn's Son 2nd of St. Anne's heads the Jerseys. The young stock are all from time-tried dams. A. E. SCHRYER, Manager. JOS. W. BARNETT, Manager. We can be reached either by steamboat, the C. P. R., or C. A. R.; the C. A. R. making connection with the G. T. R. at Coteau Junction. Rockland is our station on all lines. 7-1-y-om

Standard Sheep Dip

(OIL OF TAR.) Non-poisonous, cheap and effective. Destroys Scab, Lice, Ticks, Foot Rot, etc. Write for Testimonials and Circulars. Manufacturers: The West Chemical Company, TORONTO, ONT. For Contagious Abortion use West's Fluid. PLEASE MENTION FARMER'S ADVOCATE.

HAWTHORN HERD OF DEEP-MILKING SHORTHORNS. We are offering 8 young bulls for sale, of first-class quality, and A1 breeding. -om Wm. Grainger & Son, - Lonsdale, Ont.

YOUNG SHORTHORNS FOR SALE Our present offering includes several choice young bulls fit for service, sired by "Scotland Yet," and out of Wartare (imp.) dams; also bull calves, from Blue Ribbon (imp.), and out of Royal George cows. Inspection and correspondence solicited. A. & D. BROWN, M. C. RAILWAY, -om IONA, ONTARIO.

SPRINGBANK FARM. Shorthorn Cattle, Oxford Sheep, and Bronze Turkeys. Young bulls for sale. -om JAS. NOLTON, WALKERTON, ONT.

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. Forty Yorkshire pigs, 2 months old, from imp. stock; imp. boar, 2 years old, and sows due to farrow soon. Write, or come and see us. **JAS. McARTHUR, GOBLE'S, ONT.** Goble's Station, G. T. R., 10 miles east of Woodstock, 2 miles from farm. Visitors met. -om

Bonnie Burn Stock Farm

Forty rods north of Stouffville station, Ont., offers 5 Shorthorn bulls and some heifers, 30 Shropshire rams and ewes from Imp. and Canadian-bred sires, at reduced prices. **D. H. RUSSELL, Stouffville, Ont.**

ARTHUR JOHNSTON

Greenwood, Ontario, Canada.

HIGH-CLASS SCOTCH SHORTHORNS

(First Importation Made in 1874.)

(My recent importation of 30 head has just arrived home from quarantine. Herd now numbers over 120 head.)

OFFERS FOR SALE

- 40 Imported Cows and Heifers,
- 40 Home-bred Cows and Heifers,
- 11 Imported Bulls and Bull Calves,
- 13 Home-bred Bulls and Bull Calves.

Railway stations—Pickering, on main line of Grand Trunk Railway, 22 miles east of Toronto, and Clarendon, 23 miles east of Toronto, on the C. P. Railway. Catalogues on application. -om

Shorthorn

BULLS AND HEIFERS FOR SALE.

Choice quality and best Scotch breeding. Imported and home bred. Imported Knuckle Duster (7293) and imp. Royal Prince head the herd, which has furnished the Provincial Fat Stock Show champion three out of the last five years. Catalogues on application.

H. SMITH, - HAY, ONT.

Exeter Station on G. T. R., half a mile from farm. -om

FOR SALE:

SHORTHORNS AND YORKSHIRES

4 SUPERIOR Scotch-bred Shorthorn bulls, 12 to 14 months; 1 two-year-old heifer of the best strains; and cows with calves at foot. Also a superior lot of Yorkshire boars and sows from 3 to 7 months old. Orders booked for spring pigs. -airs and trios supplied not akin.

H. J. DAVIS,

BOX 290. -om WOODSTOCK, ONT.

6 Shorthorn Bulls 6

5 cows in calf and yearling heifers. -om
A lot straight Scotch breeding.

SHORE BROS., WHITE OAK, ONT.

SHORTHORNS FOR SALE

Young stock of both sexes, reds and roans.

JOHN R. HARVIE, ORILLIA, ONT.

SHORTHORNS AND BERKSHIRES.

Young bulls, six to twelve months old; cows and heifers. Berkshires (various ages, either sex), and Embled geese. **MAC. CAMPBELL,** Northwood, Ont.

Shorthorns FOR SALE:

12 young bulls,
10 yearling heifers and heifer calves,
16 2-year-old heifers and young cows,
several well advanced in calf to Precious Stone (imp.). Prices moderate. Write for particulars, -om
G. A. BRODIE, Stouffville Station, Bethesda, Ont.

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.

PLEASE MENTION FARMER'S ADVOCATE.

THE IMPROVED
U. S. SEPARATOR
AGAIN DEMONSTRATES ITS SUPERIORITY.

Read the following report by a Canadian Government Butter and Cheese Inspector of the work of the U. S. and De Laval Cream Separators at the Creamery of Ste. Anne de la Perade and notice the great saving of butter-fat made by the U. S. over the De Laval.

TO THE PRESIDENT AND DIRECTORS OF THE CREAMERY OF STE. ANNE DE LA PERADE:

Gentlemen—At Mr. F. X. O. Trudel's request I came here to follow the operations of a contest between the De Laval and U. S. Cream Separators. I followed the work of these machines since the 16th, and you will see the work of each as follows:

THE DE LAVAL SEPARATOR.

	Nov. 16, 1900.	Nov. 19, 1900.
Milk received.....	2,219 lbs.	3,386 lbs.
Fat in whole milk.....	4.60 p.c.	4.60 p.c.
Quantity skimmed per hour.....	3,504 lbs.	3,627 lbs.
Average temperature of milk.....	93 degrees.	80 degrees.
Average speed (rev. per minute).....	5,690	6,000
Percentage of cream.....	17.35	17.35
Fat left in skim milk.....	10&11 of 1 p.c.	07 & 08 of 1 p.c.

THE U. S. SEPARATOR.

	Nov. 17, 1900.	Nov. 21, 1900.
Milk received.....	1,177 lbs.	2,775 lbs.
Fat in whole milk.....	4.60 p.c.	4.80 p.c.
Quantity skimmed per hour.....	2,715 lbs.	3,468 lbs.
Average temperature of milk.....	91 degrees.	88 degrees.
Average speed (rev. per minute).....	8,000	8,025
Percentage of cream.....	21.32	17.12
Fat left in skim milk.....	03 & 04 of 1 p.c.	03 & 07 of 1 p.c.

TOTAL OF EACH FOR THE TWO DAYS.

	De Laval Separator.	U. S. Separator.
Milk received.....	5,605 lbs.	3,952 lbs.
Average temperature.....	87 1/2 degrees.	89 degrees.
Average speed.....	5,825	8,025
Total loss of fat.....	4.02	1.84
Loss per 100 lbs. of fat.....	1.55 lb.	.87 lb.
Total loss in cash.....	\$1.15	\$0.42

Sworn before me Nov. 21, 1900.

T. E. LANONETTE, T. P. ex. of C. C. Ste. Anne.

L. P. LACOURSIERE,

Government Butter and Cheese Inspector.

NOTICE that the De Laval lost \$1.15 in separating 5,605 lbs. of milk or .205 on 1,000 lbs. while the U. S. lost .42 in separating 3,952 lbs. of milk or only .106 on 1,000 lbs. by which it will be seen that the De Laval lost in actual cash nearly twice as much as the U. S.

In other words, a creamery separating 10,000 lbs. of milk a day would save in a year in butter-fat alone, by using the U. S. Separator, \$361.35 that would be lost by using the De Laval Separator.

The President and Directors, after carefully considering the Judges' report, decided to purchase a No. 0 Improved U. S. Separator.

This is only one instance among many where the

IMPROVED U. S. SEPARATOR HAS PROVED ITSELF TO BE A CLEANER SKIMMER THAN THE DE LAVAL.

For further particulars and information, write the

VERMONT FARM MACHINE CO.,

BELLOWS FALLS, VT.

REMEMBER, there is no duty on Improved U. S. Separators shipped into Canada.

Maple Lodge Stock Farm

ESTABLISHED 1854.

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

LEICESTERS—Imported and home bred—the best.

ALEX. W. SMITH,

MAPLE LODGE P. O., ONT.

SPRING GROVE STOCK FARM

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

T. E. ROBSON, Ilderton, Ont.

W. R. Bowman, Mt. Forest, Ont.

We have five choice young bulls of various ages, also a few in-calf heifers and cows from prizewinning stock, which we will dispose of at reasonable prices. We also offer for sale sixty Shropshire and Suffolk Down ewes of excellent breeding and quality, at from \$10.00 to \$15.00 each. All stock registered. -om

A QUICK, SHARP CUT hurts much less than a bruise, crush or tear. **DEHORNING** 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. B. McKENNA, V.S., Picton, Ont. THE LATE A. C. BROSIUS' PATENT.**

Maple Hill Holstein-Friesians

SPECIAL OFFERING: Four bull calves, born in August and September, sired by the great bulls, Count Mink Mercedes and Daisy Teak's King, and out of prizewinning and producing dams. They are show calves, about the best I ever bred. One yearling bull, the first prize calf at Toronto, 1900. Also a nice yearling heifer—a bargain. -om
HARRISBURG STN., G.T.R. G. W. CLEMONS, GALT STN., C.P.R. ST. GEORGE P.O., ONT.

HOLSTEINS FOR SALE.

I AM now offering 4 royally-bred Holstein bulls: Regulator DeKol, Pompos DeKol, Jessie 3rd's Inka DeKol, DeDieker's DeKol. All from heavy-milking dams, closely related to DeKol 2nd and Netherland Hengerveld, the greatest of Holstein cows. -om
J. A. CASKEY, Madoc, Ont.

Maple Glen Stock Farm.

The home of officially tested, Advanced Registry, dairy test and showing-winning herd of **HOLSTEINS**. A grandson Sylva now for sale. Price is in keeping with breeding and performances. -om

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

IT PAYS TO ADVERTISE IN THE **FARMER'S ADVOCATE**

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. -om

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

FOR SALE.

6 YEARLING JERSEY BULLS, sired by Brampton's Monarch (imp.), and from tested cows; also registered and high-grade springer. -om
B. H. BULL & SON, BRAMPTON, ONT.

GLEN ROUGE JERSEYS.

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

THOSE

Butter Jerseys

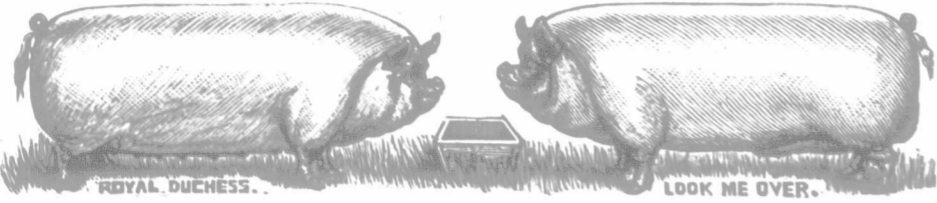
ADVERTISED ARE ALL SOLD.

But I have others fully as good, or better. Heifers from 1 month up to 2 years. Several soon due to calve. Another g. g. daughter of old Massena, 10 months old. Three fresh young cows, grand udders. One yearling bull. One aged bull. No young bull calves left, but more to come.

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

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.

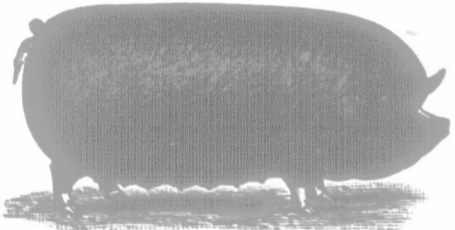


"A Stock Holder"

For holding stock the "Page" is the only reliable kind. It is used on the largest Stock Farms in Canada; equally suitable for small or large stock. We now make our own wire. Could not get good enough before. It is twice as strong as that in other fences and better galvanized. Our Fencing is shipped from our factory ready-made, and our local representative can put up a string of it for you in short order. Prices lower this year.

The PAGE WIRE FENCE CO. (Ltd.)
WALKERVILLE, ONT.

"D. ROSS, Box 553, Winnipeg, General Agent. Fence in Stock."



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 5950, 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.

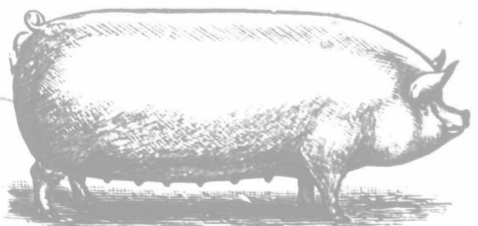
FRESH BERKSHIRE BLOOD.

Have secured the first choice of the champion gold medal herd of America (which won over 400 prizes, cups and medals), including the \$400 show sow, Elphick's Matchless (never beaten), and other sweepstakes sows in the United States. Also 15 April, May and June boars and 15 sows of the same age, and 3 fall litters, selected to meet the best Canadian demand, being long, low, and extra good through the heart.

Farm within 10 minutes' walk of electric R. R. terminus on Kingston road.
DURHAM & CAVAN, East Toronto, Ont.

OAK LODGE YORKSHIRES

ARE THE CORRECT TYPE TO BRING THE GREATEST PROFIT.



We breed our winners, and we win more prizes than all other herds combined at Toronto, London, and other large shows. Sweepstakes in bacon classes over all other breeds in dressed carcass competition, also on foot, for two years in succession. Championship carcass in bacon class at Chicago, 1900. First-prize herd at Toronto Industrial for nine years. Write for prices.

Brethour & Saunders, Burford, Ont., Can.

PLEASE MENTION FARMER'S ADVOCATE.

COLDSRING HERD TAMWORTHS

Sept. and Oct. boars and sows of the best bacon type in Canada. Boars and sows from Thrifty Maid, sweepstakes sow at Guelph.

NORMAN M. BLAIN,
Brant Co. Coldspring Farm, St. George.

LITTLE'S PATENT FLUID SHEEP DIP AND CATTLE WASH

THE ORIGINAL Non-Poisonous Fluid Dip

Still the favorite dip, as proved by the testimony of our Minister of Agriculture and other large breeders.

For sheep.

Kills ticks, maggots; cures scab; heals old sores, wounds, etc., and greatly increases and improves growth of wool.

Cattle, horses, pigs, etc.

Cleanses the skin from all insects, and makes the coat beautifully soft and glossy.

Prevents the attack of Warble Fly.

Heals saddle galls, sore shoulders, ulcers, etc. Keeps animals free from infection.

No danger, safe, cheap, and effective

Beware of imitations.

Sold in large tins at 75 cents. Sufficient in each to make from 25 to 40 gallons of wash, according to strength required. Special terms to breeders, ranchmen, and others requiring large quantities.

SOLD BY ALL DRUGGISTS. SEND FOR PAMPHLET.

Robert Wightman, Druggist, Owen Sound.
Sole agent for the Dominion.

CHAMPION EVAPORATOR

For MAPLE SYRUP and SUGAR. Has a corrugated pan over firebox, doubling boiling capacity and saving fuel; small interchangeable syrup pans (connected by siphons), easily handled for cleansing and storing, and a Perfect automatic regulator, which secures rapid and shallow evaporation, and produces the best quality of syrup. The Champion is a perfect evaporator for



Catalogue Free.

SORGHUM, CIDER and FRUIT JELLIES.
THE GRIMM MFG. CO.,
84 WELLINGTON ST., MONTREAL.

WOODSTOCK STEEL WINDMILLS

Galvanized or painted.

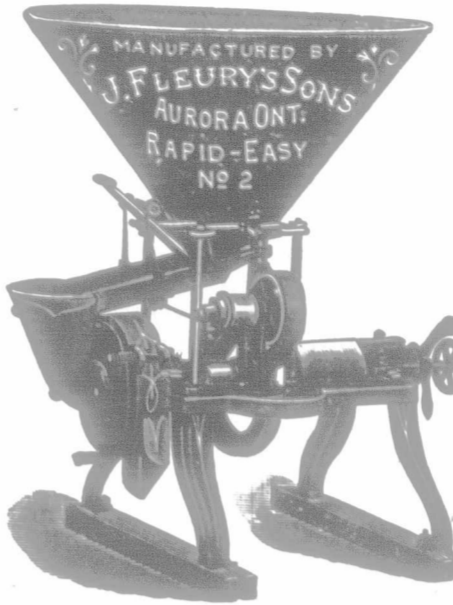
For Power or Pumping.

The DANDY Windmill

with Graphite Bearings, runs easy and controls itself in the storm.

GRINDERS, PUMPS, WATER TANKS, DRINKING BASINS, AND SAW BENCHES.

WOODSTOCK WIND-MOTOR CO.,
WOODSTOCK, ONT. (Ltd.)



"RAPID-EASY" GRINDERS.

Suitable for ANY POWER. Do MORE WORK with SAME POWER than ANY OTHER machines.

BALSOVER, November 28th, 1900.

The R-E Grinder I got last winter continues to give ENTIRE SATISFACTION to my customers. I grind twenty bags an hour, and do good work.

J. D. BRUCE.

MOUNT PLEASANT, MICH., U. S. A.,
January 16th, 1901.

With your R-E Grinder No. 3, doing custom work, we can grind 250 bags of corn and oats in ten hours. We are using about 25-horse power. We do not see how so comparatively small a machine can do so much work. It is ahead of anything of that kind that we have ever seen.

THE HARRIS MILLING COMPANY.

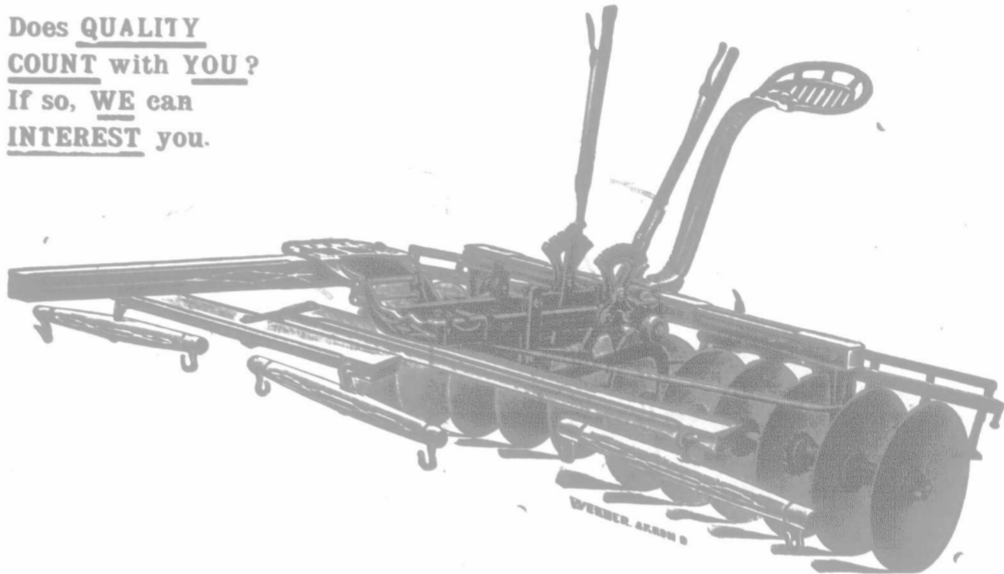
We shall be glad to have your enquiry by letter or card.

J. FLEURY'S SONS, Aurora, Ont.
Medals for Plows: Chicago, '93; Paris, 1900.

Easy on the Driver.

Easy on the Team.

Does QUALITY COUNT with YOU? If so, WE can INTEREST you.



The Frost & Wood "Windsor" Disc Harrow

Built in 8 sizes, for 2, 3 or 4 horses, with 16, 18 and 20 inch plates.

Sizes and Prices to Suit Everyone.

If You are interested, send for our 1901 Catalogue—it tells you all about them.



Toronto, London, Winnipeg, Montreal, Quebec, St. John, N.B. Truro, N. S.

HEAD OFFICE AND WORKS: Smith's Falls, 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.

GEORGEVILLE, P. Q., January 16th, 1901.

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

GENTLEMEN,—I have been using one of your twenty-light gas machines since last August, and am perfectly satisfied with it in every respect. I have used both coal gas and electric light, but much prefer the acetylene light to either, as being more steady and an easier light for the eyes.

With regard to your machine, I have nothing at all to say against it, as it is easily cleaned, needs absolutely no attention when operating. I shall at any time be most pleased to show my plant to anyone, or do anything in my power for your machines.

Yours truly, M. L. WILLIAMS.



Catalogue Printing our Speciality.

Many of the best Catalogues in Canada are produced by us. Latest type faces, designs, ornaments, and modern machinery.—Best in America. Up-to-date covers designed by special artists without extra charge.

London Printing & Litho. Company, Ltd.,
LONDON, ONTARIO.

TORONTO ENGRAVING CO.
92 BAY ST
CUTS BY ALL PROCESSES
LIVE STOCK A SPECIALITY.

Please Mention The Farmer's Advocate.

Highest Quality Always.

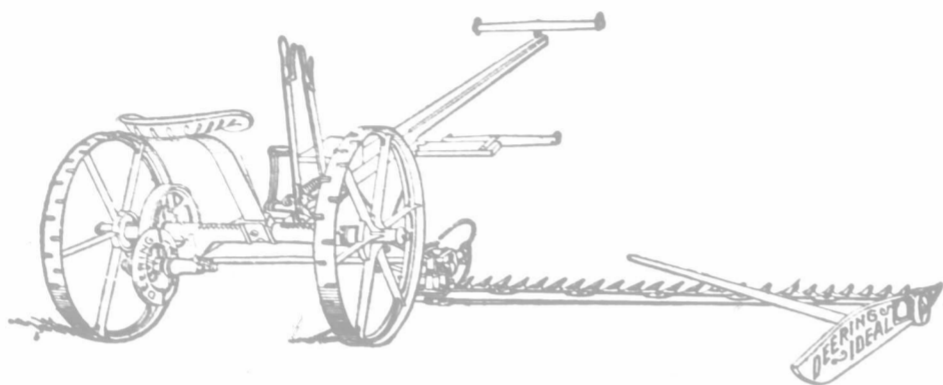
If you want Dry Goods of the latest and newest kinds, Groceries of the finest and freshest quality, and everything that you Eat, Drink, Wear or Use the best that can be obtained, then trade at the Hudson's Bay Stores.

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.

THE
MACHINES

THAT MADE
AMERICA FAMOUS.



**Deering
Harvester
Company**

AT— Paris
Exposition.

Can't you see why **DEERING** leads and others try to follow?

HONORS ENOUGH FOR A NATION
SPECIAL CERTIFICATE OF HONOR.
Grand Prize.

6 GOLD MEDALS. 5 SILVER MEDALS.
12 BRONZE MEDALS, including collaborators.

Deering Harvester Co.,

MAIN OFFICE AND FACTORY:

Chicago,
U. S. A.

CANADIAN BRANCH HOUSES:

Toronto, Ont.
London, Ont.
Montreal, Que.
Winnipeg, Man.

Government Analysis.

LABORATORY OF INLAND REVENUE,
OFFICE OF OFFICIAL ANALYST,
Montreal, April 8, 1895.

"I hereby certify that I have drawn, by my own hand, ten samples of the

St. Lawrence Sugar Refining Co.'s

EXTRA STANDARD GRANULATED SUGAR, indiscriminately taken from ten lots of about 150 barrels each. I have analyzed same and find them uniformly to contain

99⁹⁹/₁₀₀ to 100 per cent. of pure Cane Sugar, with no impurities whatever."

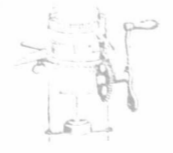
(Signed) JOHN BAKER EDWARDS, Ph. D., D.O.L.,
Prof. of Chemistry and Public Analyst, Montreal.

Low, Wide-Tire Iron Wheels FOR WAGONS



Domestic Wrought Iron
Wheels

Family Knitter



Cheapest, Simplest, Best.
Price, \$8.00.
Write for circular.

Dundas Knitting Machine Company,
DUNDAS, ONTARIO.

PLEASE MENTION FARMER'S ADVOCATE.

**BELL
PIANOS AND ORGANS**

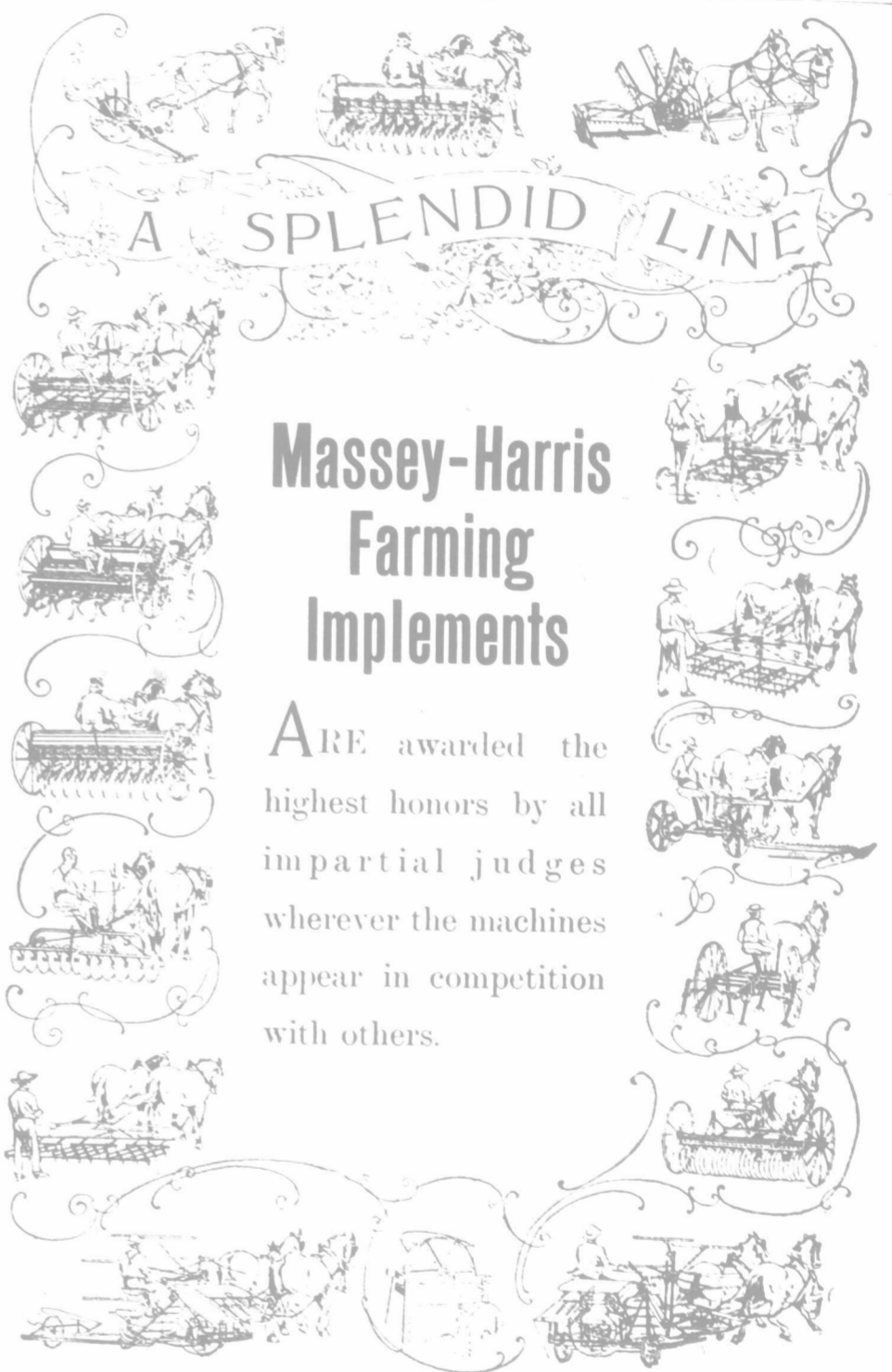
BUILT TO LAST A LIFETIME BY THE
LARGEST MAKERS OF PIANOS & ORGANS IN CANADA.

The Bell Organ & Piano Co., Ltd., Guelph, Ont.

(CATALOGUE NO. 40 FREE ON REQUEST.)

J. J. H. McLEAN & CO.,

530 MAIN STREET, WINNIPEG, WHOLESALE AND RETAIL AGENTS FOR MANITOBA



A **SPLENDID LINE**

**Massey-Harris
Farming
Implements**

ARE awarded the highest honors by all impartial judges wherever the machines appear in competition with others.

FOR SALE—Mammoth Bronze Turkeys. The very best strain for breeding purposes. All heavyweights.

R. G. ROSE, GLANWORTH, ONT.

For Sale Light and Dark Brahma Cockerels. Bred right. From Toronto and London winners. Choice birds, \$2 and \$3 each. Chas. B. Gould, box 365, Glencoe, Ont.

**STEAMSHIP
Tickets**

If you are going to the Old Country, or sending for your friends, apply to our nearest railway ticket agent, who can supply outward and prepaid tickets at lowest rates.

Shippers: Messrs. P. & O. Line, Messrs. Cunard, Messrs. White Star, Messrs. Canadian Pacific, New York, etc. Write for circular.

W. P. F. CUMMINGS,
General Agent, C. P. R. Offices,
WINNIPEG.

PLEASE MENTION FARMER'S ADVOCATE.

326 FIRST PREMIUMS SEND FOR FREE CATALOGUE. Prairie State Incubator Co., Homer City, Pa.

INCUBATORS

A. J. MORGAN, MFR., LONDON, ONT.

SHOEMAKER'S POULTRY BOOK



And Almanac for 1901, two colors, 160 pages over 100 illustrations of Fowls, Incubators, Brooders, Poultry Houses, etc. How to raise Chickens, successfully, their care, diseases and remedies. Diagrams with full description of Poultry houses. All about Incubators, Brooders and the roughbred Fowls with lowest prices. Price only 15 cents. C. C. SHOEMAKER, Box 187, FREEPORT, ILL.