

FARM AND DAIRY & RURAL HOME

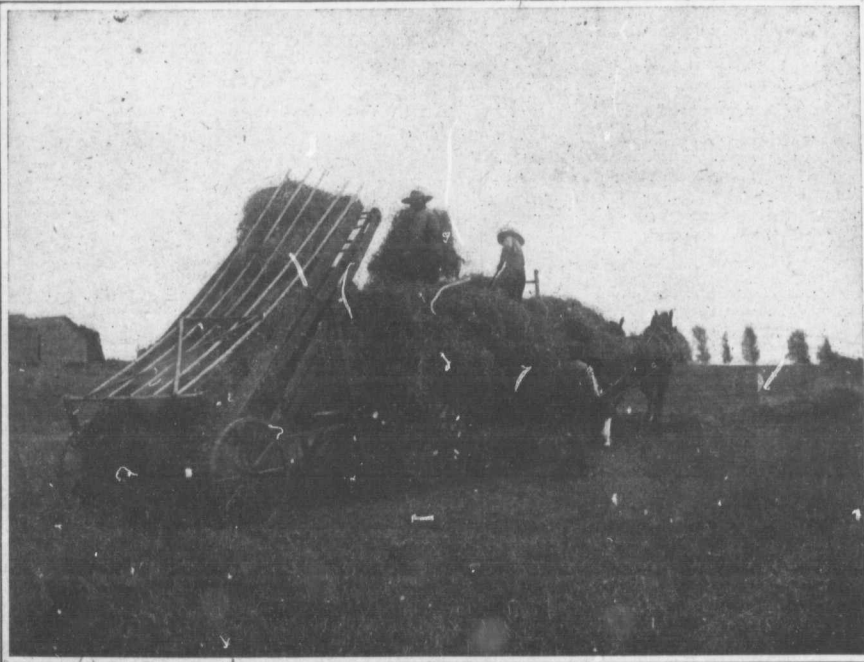


DEVOTED TO
BETTER FARMING
AND CANADIAN
COUNTRY LIFE



Toronto, Ont., August 2, 1917

Comm. of Conservation
Asst. Chairman
Jan 13



"MAKING HAY WHILE THE SUN SHINES." A LITERAL APPLICATION OF THE PROVERB.

SPECIAL FEATURES OF THIS ISSUE

What Feeds Shall I Buy for Winter Use?

By E. S. Archibald.

Manure for the New Seeding

By F. E. Ellis, Editor Farm and Dairy.

Alfalfa and Corn Ensilage for Dairy Cows

Appreciation, Enthusiasm and Perseverance

By Miss R. M. McKee.



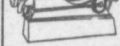
AN Imperial Oil tank wagon is a familiar sight in almost every city and town. Unimportant in itself, it is nevertheless an integral part of a great distributing system—a system of interest to you because it has placed within your reach the best in petroleum products at a reasonable price.

All our oils are supplied in steel barrels and steel half-barrels—convenient, economical. No waste. You use every drop you pay for.

AN OIL FOR EVERY FARM MACHINE



For Gasoline Engines, Tractors, Autos or Stationary
POLARINE OIL
STANDARD GAS ENGINE OIL.



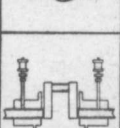
For Kansas Engines, Tractors or Stationary
POLARINE OIL HEAVY
IMPERIAL KEROSENE TRACTOR OIL
(Distillated by International Harvester Co.)



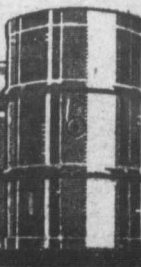
For Open Bearings of Farm Machinery
PRAIRIE HARVESTER OIL
—very heavy body, resists cold, won't thin out with moisture
ELDORADO CASTOR OIL
—a thick oil for worn and loose bearings



For Steam Cylinder Lubrication, whether Tractor or Stationary Type
CAPITOL CYLINDER OIL
—the standard product for steam cylinder lubrication.



For Grease Cup Lubrication of Bearings
THRESHER HARD OIL
—a clean refined oil high melting point



Brandon Fair Sets a New Standard for Itself

AN abundance of classes and exceptional high quality in all were two of the prominent features of the big Annual Fair at Brandon, Manitoba, last week. The exhibits were not lacking in appreciation, either, as indicated by the throngs of visitors who poured through the gates each day.

Seventy-two tractors in the plowing demonstration afforded a magnificent sight and created intense interest. They were of various sizes and patterns, and the way the farmers gathered about them evidenced the Westerner's great interest in machines for rapid work. The demonstration afforded a very practical education of the modern advancement tractor farming has achieved.

An exhibit of much interest to sheep-breeders was that arranged by the Minister of Agriculture, Hon. Mr. Burrell. This display showed virtually every grade of English wools and gave breeders the opportunity to compare the wool of the different breeds and to become acquainted with the average weight of fleeces and the quality obtained from each. Comparison was also made of the British, American and Canadian wool, representing the different classes as they are graded for the market. The department is furnishing valuable assistance to sheep-raisers in the West in establishing a plan for wool-selling through the co-operative association, by furnishing officials who grade the clip and advise the growers as to the proper method of handling their output. Another interesting exhibit by the Poultry Branch of the Dominion Department of Agriculture covered the co-operative marketing of eggs. Three large panels illustrated the marketing methods followed in Egypt, Denmark and Prince Edward Island. The Egyptian showed the "open market," where the producer sells directly to the consumer—a ideal system. The Danish method is also illustrated, because Denmark may be rightly called "The Home of Co-operation."

The necessity for intensive farming operations, together with keen competition, has developed in Denmark a co-operative marketing method that largely explains the popularity of Danish products in the British market. During the past five years the Dominion Department of Agriculture, in connection with the Provincial Department, has been conducting in Prince Edward Island a system of co-operative marketing similar to that practiced in Denmark.

For the women folks one of the interesting demonstrations was that in canning. Miss E. M. Atkinson, of the Agricultural College, Extension Department, showed the newer method of canning vegetables by the Cold Pack Method. Carrots, tomatoes, beets, etc., were packed in glass jars, sterilized being completed by steaming for three hours.

One of the most distinctive and finest exhibits ever made in Canada is that of the Canadian Pacific Railway. This consists of two distinct parts. The Alaska exhibit, gathered together after years of toil and at great expense, consists of Indian totem poles, curios of all sorts, together with a splendid scenic view of the mystic of Seagway. The other section includes the Rocky Mountain exhibit, imitating in their natural haunt practically all the wild animals of the Rockies, together with scenic views of the Bow River Valley, Banff, etc. These exhibits, it is understood, will be shown again at the Canadian National, Toronto, and should be one of the most attractive features.

Live Stock Exhibit.

Live stock was one of the big features of the Fair. Few classes but

were well filled with choice material. One of the new exhibits to arrive from the East was Mr. J. A. Watt, of Elora, who brought along a bunch of Shorthorns worthy of the ability of our Eastern men as feeders and breeders. The Mr. Watt won the second prize for the best Shorthorn bull, three years and over. A. McEwen, of Brantford, was on hand with a goodly flock of Hampshire Down, carrying off the champion and reserve in both classes. L. O. Clifford, of Oshawa, Ont., and James Bowman, of Guelph, figured prominently in the Hereford and Aberdeen-Angus prizes.

In the Poultry class, J. H. Warrington, of Cornwall, Ont., was one of the largest competitors. His entries covered a large percentage of the classes, including Plymouth Rocks (Barred and Buff), Partridge Rocks, Silver Laced Wyandottes, Golden Laced Wyandottes, and White Wyandottes, Black Partridge, Columbia, Java, Rhode Island, and other fancy varieties. He was easily the largest exhibitor of poultry at the Fair.

The following are the outstanding winners in the different classes: Clydesdale, grand champion stallion, "Edward Garret," owned by Ben Fitzlawn, Olds, Alta.; junior champion stallion, "Blazon Count," owned by O. Mulline, Myrtle, Man.; grand champion Clydesdale, champion Thorburn and Riddle; junior champion, Billy, McKirdy Brothers, Napinka, Man.

The outstanding winner among the Percherons was Mr. Devine. His "Albin" secured the grand championship. Other prizes won by Mr. Devine were first in five best stallions, first and second in three-year-old class, and first and third in two-year-old class.

In the Aberdeen-Angus, J. D. McGregor won senior, junior, and grand championship for cows, first for graded herd of bull and four females, and first for junior herd. James Bowman, of Guelph, got reserve senior championship, first for bull two years old, first for heifer two years old, and first for senior yearling. In Herefords, the senior prize was won by the Arm River Stock Farm, with second and third place to L. O. Clifford, Oshawa, Ont. J. A. Chapman, of Hayfield, Man., secured first four places on bulls two years old, one yearling bull and on the senior bull calf first place went to L. O. Clifford, Oshawa.

In sheep, W. J. Hoover & Sons, Bitters Lake, secured the championship on Southdowns, while the best-horn championships went to Johnson Brothers and H. Simpson. In the Suffolk, the senior prize on rams went to J. D. McGregor, James Bowman, of Guelph, Ont., taking the first and second. The championships were eventually divided between these two, McGregor securing it on the rams and Bowman for the ewes. The championship on the Leinners was secured by Herbert Smith, of Camrose, Alta., who also took the championship on the ewes. Among the Shropshires, A. McEwen, of Brantford, Ont., was also at the top, taking the championship on the ram, while W. L. Grant, of Johnston City, Man., claimed the reserve. On the ewes the order was just reversed. Peter Arkell & Sons, of Teewater, Ont., took first place on Oxford rams, both for two years and over and for the shearing class. Arkell also secured both the first and second place on the ewes.

In the ewine classes, the competition was also keen. In Berkshire, Alfred English, of Harding, Man., secured the championship. In Yorkshires, A. D. MacDonald & Son, of Napinka, secured the championship on both her and ewe, and also several other prizes in the different classes. In the Poland Chinas, the champion-

(Continued on page 17.)



We Welcome France

Trade increases

VOL. XXXVI

Some S

THE live stock of all necessary ter and sprin in the initial purtee greater and che and more profitabl of an ideal ration follows:

- (1) Cheapness, net protein and total d
- (2) Bulk.
- (3) Per cent. dig
- (4) Balance.
- (5) Variety.
- (6) Suitability to
- (7) Palatability.
- (8) Laxativeness.

The experienced planation of any classes of animals require different due to one or ber of the above merits.

The cheapest ration for live stock largely home grown applies to all classes but particularly horses, and sheep; attention is drawn value and cheapne ingredients for and succulent roughage as alfalfa and roots. The buying of mill no means a bad provided such had judiciously made, often pay the fa from the feed an standpoints, to sell crops as wheat, potatoes, turnips, buy such feeds as cake, cottonseed, will cost little if per ton, and may much more in bot fertilizer value. ple, note the valu digestible nutrient tilizer value of vouts compared with and cottonseed. Certainly it has beyond a doubt the tilizing ingredients feeds may, in man obtained free of ch



FAIR AND DAIRY & RURAL HOME



We Welcome Practical Progressive Ideas.

the Recognized Exponent of Dairying in Canada

Trade increases the wealth and glory of a country; but its real strength and stamina are to be looked for among the cultivators of the land.— Lord Chatham

VOL. XXXVI

TORONTO, ONT., AUGUST 2, 1917

No 31

What Feeds Shall I Buy For Winter Use?

Some Suggestions on a Problem that is Worrying Us All—E. S. Archibald, Dominion General Husbandman

THE live stock farmers who now prepare for all necessary feeds during the coming winter and spring will not only save money in the initial purchase, but will thereby guarantee greater and cheaper production and healthier and more profitable animals. The requirements of an ideal ration for any farm animal are as follows:

- (1) Cheapness, not necessarily per ton, but in protein and total digestible matter contained.
- (2) Bulk.
- (3) Per cent. digestibility.
- (4) Balance.
- (5) Variety.
- (6) Suitability to animals and their product.
- (7) Palatability.
- (8) Laxativeness.

The experienced live stock feeder needs no explanation of any of the above points. Different classes of animals and animals of different ages require different feeds due to one or a number of the above requirements.

The cheapest and best ration for live stock must be largely home grown. This applies to all classes of stock, but particularly to cattle, horses, and sheep. Particular attention is drawn to the value and cheapness of food ingredients for such rich and succulent farm grown roughages as alfalfa, clover, silage and roots. However, the buying of mill feeds is by no means a bad practice, provided such purchases are judiciously made. It may often pay the farmer both from the feed and fertilizer standpoints, to sell such cash crops as wheat, oats, barley, potatoes, turnips, etc., and buy such feeds as bran, oil cake, cottonseed, etc., which will cost little if any more per ton, and may be worth much more in both food and fertilizer value. For example, note the value of total digestible nutrients—and fertilizer value of wheat, and oats compared with oil cake and cottonseed, in table II. Certainly it has been proven beyond a doubt that the fertilizing ingredients in mill feeds may, in many cases, be obtained free of charge in that

the food value is sufficiently great to more than pay for the initial cost. That the fertilizing ingredients are fully as valuable as similar amounts contained in commercial fertilizers is beyond dispute.

What Feeds to Choose.

In the purchasing of meals there are only two methods of choosing the desirable feeds. Which of these methods the farmer uses depends altogether on the quantity, quality, and variety of farm-grown roughages. Either the farmer must purchase all feeds on the protein standard or he must purchase on the standard of total digestible nutrients. The two following examples are self-explanatory:

The dairy farmer who has an abundance of grass hay, such as timothy, and corn ensilage, must in purchasing meals choose those which are richest and cheapest in their protein content. It will be clearly seen from table I. that the meals

which would give greatest satisfaction would be: Dried distiller's grains, cottonseed meal, linseed oil cake, and wheat bran. Particular attention is drawn to the fact that it is the digestible protein and not the guarantee of protein given on the bag which should govern his purchase.

On the other hand, the farmer who has an abundance of alfalfa hay or red clover hay, corn ensilage, and a reasonable quantity of roots, need not worry as to the buying of meals to supply cheap protein. This is already supplied in the rich hay. His only reason for feeding a meal ration is to supply in a concentrated form the same proportion of digestible nutrients as found in his excellent roughages, since any animal can consume only a reasonable bulk of food. Hence at the present prices such feeds as corn bran, dried distiller's grains, and a limited quantity of gluten feed or cottonseed meal would be suitable. Moreover, he would require not more than two-thirds of the total grain to supply the desirable nutrients.

The accompanying tables are to the business farmer self-explanatory. However, the following points may be noted:

In table I, it will be noted that protein is the most expensive feed in a ration, yet is absolutely necessary in reasonable quantity and in readily digestible form. Protein can always be raised most cheaply on the farm in the form of high grade hay and good ensilage. It will, again be noted in this table that the highest grade feeds always contain the cheapest protein. For example, compare the two grades of cottonseed meal, or either of these with gluten feed. Again, guaranteed analysis on the bags represent the food ingredients not in the proportion in which it will be digested, but only in the actual total content. Compare, for example, the total content of corn, bran and wheat bran in the digestible content and the price thereof.

In table II, the total digestible nutrients are calculated by adding all of the elements contained in the feed; namely, protein, carbony-

Table 1 BUYING PROTEIN IN FEEDS

	Price per ton, July 1, 17	Crude protein		Digestible protein per 100 lbs.	Ratio of digestible protein to 1 lb.	Cost of Total crude protein per lb.	Cost of Digestible protein per lb.
		Lbs.	%				
Meals and Grains—							
1. Ground Corn	\$88.00	10.1	5.5	10.4	28.6	8.53	24.7
2. Gluten Feed (23 per cent.)	45.00	25.4	21.6	2.7	11.1	3.4	11.1
3. Corn Bran	20.00	30.7	5.8	11.6	16.3	1.2	17.2
4. Dried Distillers' Grains	36.00	30.7	23.4	3.0	12.8	2.8	8.9
5. Ground Feed Wheat	52.00	18.4	9.2	7.7	20.9	2.9	23.2
6. Wheat Middlings	45.00	17.8	15.7	4.0	12.0	3.8	13.7
7. Wheat Bran	24.00	16.0	12.5	3.9	13.9	3.6	12.6
8. Ground Oats	52.00	12.4	9.7	6.3	20.9	2.8	26.8
9. Ground Oats	51.00	11.5	9.0	7.8	22.2	2.8	28.3
10. Linseed Oil Meal (O. P.)	60.00	33.9	30.2	1.6	7.3	8.2	8.2
11. Cottonseed Meal (choice)	60.00	44.1	37.0	1.1	5.6	6.7	6.7
12. Cottonseed Meal (good)	46.00	27.6	21.6	1.4	6.1	7.4	7.4
13. Dried Beet Pulp	32.00	8.9	4.8	14.6	17.9	34.7	34.7
Roughages—							
1. Alfalfa Hay	\$14.00	14.9	10.6	3.9	4.7	6.6	6.6
2. Red Clover Hay	12.00	12.8	7.6	5.7	4.7	21.9	21.9
3. Timothy Hay	12.00	6.2	3.0	15.2	18.4	19.1	19.1
4. Corn Ensilage	2.00	2.1	1.1	15.1	4.7	9.0	9.0
5. Mangels	2.00	1.4	.8	8.2	7.1	12.5	12.5

Table 2 BUYING TOTAL DIGESTIBLE NUTRIENTS IN FEEDS

	Price per ton, July 1, 17	Digestible nutrients per ton	Cost of Digestible nutrients per 100 lbs.	Manure value per ton	Net cost per ton	Net cost of Digestible nutrients per 100 lbs.
Meals and Grains—						
1. Ground Corn	\$88.00	1676	\$ 4.05	\$ 2.78	\$64.22	\$ 3.81
2. Gluten Feed (23 per cent.)	45.00	1614	2.97	7.99	45.99	2.87
3. Corn Bran	20.00	1463	1.37	5.61	16.39	1.12
4. Dried Distillers' Grains	36.00	1778	2.02	2.43	26.57	1.49
5. Ground Feed Wheat	52.00	1602	3.24	4.68	47.32	2.95
6. Wheat Middlings	45.00	1564	2.78	5.13	37.87	2.42
7. Wheat Bran	24.00	1218	2.75	7.81	26.19	2.15
8. Ground Oats	52.00	1408	3.69	4.83	47.47	3.37
9. Ground Oats	51.00	1400	3.81	4.56	44.44	3.22
10. Linseed Oil Meal (O. P.)	60.00	1558	2.50	12.10	37.25	2.43
11. Cottonseed Meal (choice)	60.00	1564	3.19	16.87	34.12	2.18
12. Dried Beet Pulp	32.00	1432	2.33	3.01	28.99	2.03
Roughages—						
1. Alfalfa Hay	\$14.00	1032	1.35	\$ 6.40	\$ 7.80	\$ 7.4
2. Red Clover Hay	12.00	1018	1.17	7.71	6.23	6.6
3. Timothy Hay	12.00	979	1.34	3.05	3.55	1.62
4. Corn Ensilage	2.00*	354	.85	1.97	.33	.43
5. Mangels	2.00*	148	.59	5.9	3.41	.95

*—Cost of raising and storing an average crop in an average season.
x—Manure value of feed based on 50 per cent. of nitrogen and 75 per cent. of potash and phosphoric acid contained and these valued at pre war prices of 18c, 6c, and 5 1/2c per lb. respectively.

drates (sugar and starch) and fats multiplied by 2%. This is the most accurate method to follow in buying feeds, as it is most nearly regulated by the quality of the home-grown roughages. The cheapest purchases on this basis at present market prices are corn bran, dried distiller's grains, beet pulp, wheat bran, and gluten feed. However, the manual value must be considered, and, on this basis, the cheapest feeds are corn bran, dried distiller's grains, beet pulp, wheat bran, cottonseed, oil cake, and gluten. Particular attention is drawn to the low net cost of digestible nutrients in high grade farm roughages.

A Sample Purchase.

A few moments' calculation on the part of the dairyman may quickly show him what feeds he should purchase, not only as to suitability, but also to cheapness. The following is an example of one of the cheapest and best rations for winter feeding of a 1,000 pound dairy cow giving 25 pounds of milk testing four per cent. fat, the choice of meals being on the basis of present market prices. Such a cow should consume daily 2.3 pounds of digestible protein, and over 15 pounds of total digestible nutrients. The maintenance of the cow would require .7 pounds protein and 7.93 pounds total digestible nutrients. Hence there must be supplied for the production of milk, 1.6 pounds of digestible protein and 7.3 pounds of digestible nutrients. A ration composed of red clover hay, 10 pounds; corn ensilage, 30 pounds; meal, 6 pounds, composed of wheat bran 2 pounds, dried distiller's grains 2 pounds, gluten feed 1 pound, and oil cake 1 pound, will answer these requirements fully.

The above ration fills all requirements as to cheapness and richness of feeds, also as to proper balancing nutrients. The bulk of feed is correct, for not only is there the proper amount of roughage, but the two main ingredients of the meal, namely, dried distiller's grains, and wheat bran, are also bulky. The laxativeness of the ration is correct since both the ensilage, bran, and oil cake are all laxative feeds. All feeds excepting gluten are extremely palatable. There is also a sufficient number of meals to give excellent variety to this ration. Undoubtedly, also, all these feeds are most suitable to milk production, and there can be no ill effects whatever on the cow or on the flavor or character of the milk. Finally, these are the cheapest feeds available under present conditions unless the farmer is so fortunate as to have alfalfa hay and mangels.

When Shall I Purchase?

Under present war conditions there is probably no one who can answer this question definitely. Generally speaking the lowest markets of feeds depends on the season of the year, condition of markets, the farm crops available, and upon the export trade of mill feeds. As a rule the cheapest average markets in an average year for the various feeds are as follows:

Bran, shorts, middlings, from July to September.
Linsed oil meal, June to August.
Cottonseed meal, September to November.
Gluten feed, May to October.
Oats, August to November.

However, the present unsettled condition, both as to home and foreign markets will so regulate the value of all mill feeds that very careful attention to the feed markets is required.

Corn Cultivation Ideas

Let It Be Frequent But Not Deep

J. T. ANDREWS, Oxford Co., Ont.

THE objects of corn cultivation are three-fold: To conserve moisture, kill weeds, or improve the mechanical condition of the soil for the benefit of succeeding crops. The last object is best attained by deep cultivation; shallow cultivation is equally efficacious for the first two, and decidedly more beneficial to the corn crop. In fact, deep cultivation may do almost as much harm as no cultivation at all. I first learned this by costly experience. Many years ago, when corn was just beginning to be a popular crop in Ontario, the man for whom I was then working planted out 10 acres to corn—a big acreage at that time. The soil was well worked up for the crop and got a couple of scuffings when the corn was small. The season was late like the present one

Illinois, a man who had left our district when a boy, came back to visit his old home community, and he explained our difficulties away. Cultivation is good for corn, he told us. It was our methods that were at fault. During the haying, when we had neglected cultivating, the feeding roots of the corn had grown up near the surface. My deep cultivation had cut off these roots on which the crop was depending for its supply of food and moisture. The old man's explanation was good, and we have never made the same mistake again.

Our practice now is to harrow the corn as many times as we can until it is two or three inches high, and then cultivate regularly until August or later. The earliest cultivation is about three inches deep, and as close to the rows as we can safely run. At each succeeding cultivation we get a little farther from the row and run a trifle shallower. In this way we get all the advantages of cultivation without injuring root growth. In closing, I would like to say a good word for the two-row riding corn cultivator. It does the work twice as fast as the old single row machine, and where one is owned the corn is apt to be cultivated twice as often. The very fact that a man can ride at his work is an encouragement to cultivation; for most of us have a lazy streak somewhere in our anatomy. But whether I had this implement or not I would cultivate often and shallow.

Manure for the New Seeding

A Farm Practice Highly Recommended

A FEW weeks ago, in company with Mr. G. A. Brethen, I visited Mr. Jas. Seymour, on his big, three hundred acre farm a few miles from Peterboro. Mr. Seymour's specialties are Clydesdale horses and Holstein cattle. After a visit to the pasture to see the live stock, Mr. Seymour suggested that we take a round-about way back to the buildings in order that he might show us the results of an experiment in manuring with which he is very well satisfied. We found two fields, side by side. Both of them had been seeded with clover the previous season. In one of them the growth was only fair. The field next to it promised a yield of twice as much per acre; the stand was thick and strong, and it was, on the whole, one of the best fields of clover that any of us had seen that season. Referring to the two fields, Mr. Seymour said:

"These two fields were seeded at approximately the same time with the same nurse crop. The first field, the one with the lighter yield of clover, is naturally the best field of the two, and the one from which we had every right to expect the best crop of clover. The difference comes in the manuring. The second field we gave a light dressing of six loads to the acre with the manure spreader last fall, and to this dressing, must be attributed the wonderful growth of the clover. I believe that as a result of this experiment, I will plan to seed all of my grain with clover, and apply all or nearly all of the manure made on the farm to the new clover fields. Had I followed this practice this year I would have manured 60 acres instead of 30."

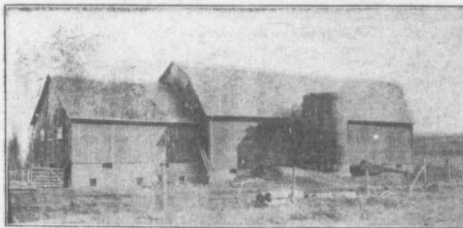
In following out the new system that he out-

(Continued on page 6.)

FINE FARM BUILDINGS IN DURHAM CO., ONT.



The Home of A. E. Ballaman is Commodious and Attractive.



The Silo is a Valued Addition to the Big Red Barn.

and the corn was neglected until after haying and wheat harvest. It made a fair growth, however, and was a promising looking field. The weeds were doing well, too. Then we cultivated and learned our lesson.

I did the work with a single row scuffer. I was determined to do a good job, so I put the scuffer in good and deep, and worked the soil up in great shape as I thought. By noon I had gotten over about three acres. On the way to dinner I noticed that the leaves on the cultivated strip were beginning to droop, while on that part of the field which I had not yet reached the leaves were erect and vigorous. I couldn't understand why this should be, but, nevertheless, I went ahead and cultivated another three acres in the afternoon with identically the same results. Then came some wet weather. After the wet weather the harvest, and the remaining four acres were never cultivated. On that four acres the weeds flourished, the land baked hard, but from it we got considerably the better crop. Why?

It was not long before an old corn grower from

A FEW weeks ago the growers of the territory addressed on this subject a man who is feed. It was published shortly after its issue of that paper received from Prof. University of Illinois explanatory. Prof. follows:

"I have read 'Feeding Dairy Cows' of May 11, with interest. The article is excellent and comes from the authorities in the dairy herd degree. We have hats to the man who has given a great thing an let's herd the best."

"If any one can of milk and butter dairy cow in a year can't I do not criticize least with a her large capacity. I milk economically the country by realize that this tion. Probably the United States has to produce high reason it seems in Mr. Gillett's as to the average dairy."

Mr. Gillett says we have been corn silage alone dairy ration, but record as stating the dairy business but alfalfa and start in the business."



Dairy Cow

Alfalfa and Corn Ensilage for Dairy Cows

A Herd of Twelve Cows Average 8,177 lbs. of Milk a Year Without Any Grain Feeding

A FEW weeks ago Mr. Gillett, one of the greatest Holstein breeders of the United States, gave an address on feeding dairy cows. This address gave the methods of a man who is feeding for great records. It was published in Hoard's Dairyman. Shortly after its publication the editor of that paper received the following letter from Prof. W. J. Fraser, of the University of Illinois, which is self-explanatory. Prof. Fraser writes as follows:

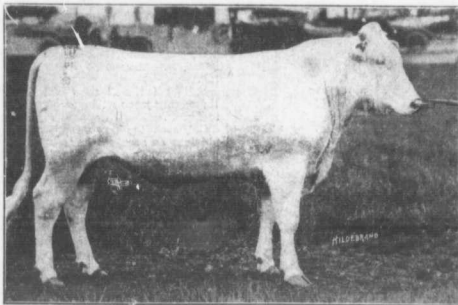
"I have read Mr. Gillett's article on 'Feeding Dairy Cows' in the Dairyman of May 11, with a great deal of interest. The article in general is excellent and comes from one of the best authorities in the country on developing a dairy herd to the highest possible degree. We must all take off our hats to the man who has accomplished a great thing and I consider Mr. Gillett's herd the best I have ever seen.

"If any one can get a large amount of milk and butterfat from a good dairy cow in a year or a life time he

can. I do not criticize his system of feeding in the least with a herd of valuable pure-bred cows of large capacity. But when it comes to producing milk economically from the average dairy cow of the country by the average dairyman, we must realize that this is an entirely different proposition. Probably two-thirds of the dairy cows in the United States have not the efficiency or capacity to produce high if they were fed high. For this reason it seems to me the following statement in Mr. Gillett's article is likely to be misleading to the average dairyman.

Mr. Gillett's Contentious Statement.

"We have heard it intimated that alfalfa and corn silage alone would make a very satisfactory dairy ration, but I want to stand squarely on record as stating that if a person is going to run the dairy business and expects to feed nothing but alfalfa and corn silage, he had better not start in the business at all and if he is in he had



King Echo Sylvja Johanna 203054.

Born Feb. 14, 1916. Sire, Avon Pontiac Echo 293065. Dam, Belle Model Johanna 2nd 113367, at 6y. 11m. 7d., 645.8 lbs. milk, 27.062 lbs. butter (2 A.R.O. daughters). Bred by A. C. Hardy, Brockville, Ont., and consigned by him to the Worcester, Mass., sale where he was purchased by Quentin Meadum, of Utica, N. Y., for \$5,350.—Cut, courtesy Holstein-Friesian Register.

better get out of it, because if it pays to feed at all it pays to feed well. My experience in front of the feed rack and my association with the dairy cow teach me that it pays to feed a good cow a well balanced grain ration every day in the year, whether she is giving milk or not."

"Few dairymen and even breeders of pure-bred herds have had the privilege of associating with the class of cows that Mr. Gillett keeps. It takes a man with very exceptional mental ability, careful observation, and many years of persistent and close application to develop a herd of this class. And this is where Mr. Gillett has made a mistake in thinking all the dairy cows in the country are too nearly like his. The feeding of average cows in the country cannot be based upon the same economic basis if the most money is to be made. In economical feeding of dairy cows, the proper balance between the cost of the ration and the amount of milk produced and the value of that

milk must always be maintained.

A Misleading Statement.

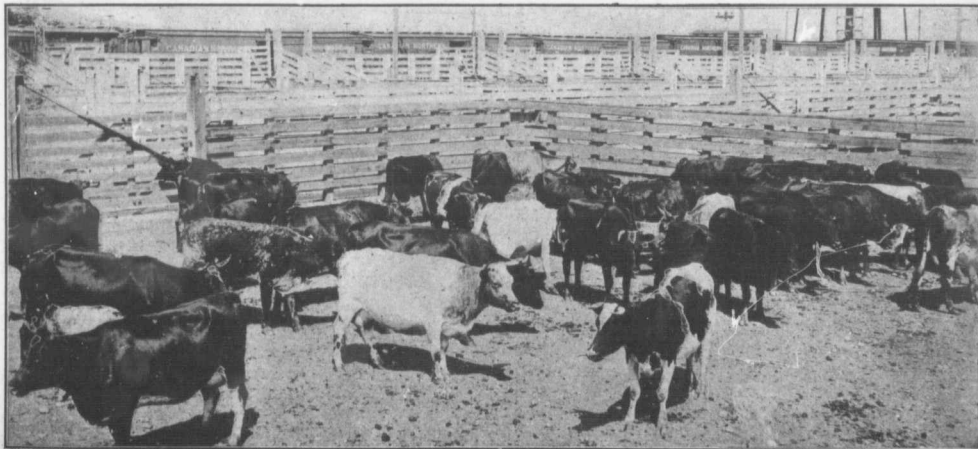
"In considering the average dairy herd it seems to me a mistake to make a statement like the above in regard to corn silage and alfalfa, and also to state that a grain ration must be fed every day in the year, whether a cow is giving milk or not. This is especially misleading under the peculiar and strained conditions as to the feed supply that exists at the present time.

"Eight years' experience in feeding cows almost exclusively on corn silage and alfalfa hay the year around, leads me to state equally emphatically that these are the most economical feeds from which to produce milk, not only with the average dairy cows but even with the better grade of cows on our dairy farms for at least seven months in the year. The average dairy cow does not have the capacity to produce more than 10,000 pounds of milk per year no matter how well she is fed. I am positively certain that cows of this class cannot be fed grain econom-

ically when producing less than 15 pounds of milk a day if they have a liberal ration of corn silage and alfalfa hay of good quality, or good pasture.

Production on Alfalfa and Silage.

"To show the great value of corn silage and alfalfa as a feed for dairy cows, I will cite a few examples. We had a grade Holstein cow on the Twenty-acre Demonstration Dairy Farm at the University of Illinois, that produced in one year from freshening 10,430 pounds of milk containing 351 pounds of butterfat on a ration of corn silage and alfalfa hay, no grain being fed for ten months previous to or during the time this record was made. Another cow in the same herd had an average yearly record of 7,861 pounds of milk containing 292 pounds of fat. She produced in one year 9,138 pounds of milk and 339 pounds of butterfat, and this highest year's record of her (Continued on page 7.)



Dairy Cows, secured for Manitoba Farmers under the Cow Purchase Scheme of that Province—One of the Methods Used to Encourage Dairying.

—Photo courtesy, Manitoba Department of Agriculture.



Airmen In the Great War

are using WRIGLEYS regularly. It steadies stomach and nerves, allays thirst, puts "pep" into tired bodies. Aids digestion. Lasting refreshment at small cost.

Chew it after every meal

The Flavour Lasts



Made in Canada

HORTICULTURE

Orchard and Garden Notes

KEEP the new strawberry bed well cultivated.

Celery needs plenty of water for its best development. Do not disturb the vines of peas or beans more than is necessary in picking.

It is often well to water gladioli thoroughly just as they are coming in to flower.

Cut back the flower stalks of delphinium as soon as they are through flowering and new shoots will come up for autumn flowers.

Cut gladioli as fresh just as the first flowers open. They will last much longer in the house and give the corn a chance to develop.

Tomatoes may be trained to stakes or trellises to good advantage. Keep the branches thinned to just the number needed for fruit.

A little hen manure or nitrate of soda scattered over onions, if they are not growing as rapidly as they should, will be of help.

Too many plants in the row have the same effect on the crop as weeds. Thin out where they are too thick.

Vegetables quickly grown are more tender and of better quality than those slowly grown. Good soil and good cultivation are needed.

Endive may be blanched by bringing the leaves up together and tying. This must be done when the leaves are dry. It is a good plan to untie the leaves after every rain and let them dry out otherwise they may decay.

Two-Thirds of Canada for Timber

ONE of the surprises to those visiting Europe in peace times is the method by which all lands are carefully examined and put to work according to their capacity. No farmer is permitted to locate on non-agricultural soil, and at the same time, good farming soil cannot be retained under such a crop as timber. Canada has only made a beginning at applying such a policy of business efficiency in the use of the nation's natural resources.

Thousands of farmers are today tied to farms that produce only a few dollars an acre, their efforts and ambitions practically wasted in a time when man-power is at a high premium. Taking the whole of Canada's area, more than two-thirds will never produce field crops, and the bulk of the two-thirds will prove profitable under only one crop, namely timber. All efforts for the protection of the forests against fire and other forms of needless waste aim to keep in a productive condition those millions of acres that can never grow field crops. Canada holds a tremendous national advantage in her forests, but from the beginning of the last century about two-thirds of the original inheritance has been destroyed by fire. Nearly all modern countries have put an end to forest fires by carefully organized protective systems. Why not Canada?—Canadian Forestry Association.

The Price of Apples

Dominion Fruit Branch, Ottawa.

MUCH interest exists as to what the price of apples will be. While we have a fairly good knowledge of crop and market conditions, yet we do not feel like making any definite statement as to the connection at the present time. That the embargo still exists upon apples entering Great Britain has a depressing effect upon the trade, but it appears to us that even though the embargo remains there should be a fair market for all the apples that will be harvested in Canada. Taking the

Dominion as a whole, the crop will be exceedingly light, and may depreciate still further before harvesting time. If the embargo is raised, prices will no doubt rise as high as last year, and we feel that the fruit grower who has produced a crop under high cost conditions is the man who should receive the greatest proportion of such proceeds. Efforts are being made by the fruit interests and the various governments concerned in the marketing of fruit, to have the embargo raised, and the fruit growers may rest assured that everything consistent with the welfare of the Empire will be done to obtain this end. We would, however, urge that those interested in the marketing of the crop should lose no time in arranging for the widest possible distribution of the crop in Canada in order that none of the crop be lost in the event of the embargo remaining.

The Fruit Crop Report

THERE has been an exceptionally heavy rainfall in Ontario and Eastern Canada during the past few weeks. In many sections the ground has been so wet that the harvesting in so far as it was impossible for several days. The heavy rains have also caused such fruits as cherries and plums to drop, and the crop of these has fallen off quite seriously in order that under such conditions have also induced a rapid development of apple scab and the difficulty of spraying has allowed the disease to make serious headway. During the blossom period in British Columbia there were also heavy rains which interfered with pollination. Recently, however, weather conditions have been very favorable.

There have been some changes in the apple situation since last month. In Nova Scotia the ravages of the canker worm and the development of scab have been serious, and have reduced the crop of Nova Scotia to some extent. Scab is also very serious in Quebec. British Columbia prospects have fallen down on account of an exceptionally heavy June drop. Indications now point for an increase of 30 per cent. over last year's crop in Nova Scotia and about 10 per cent. in British Columbia. Quebec will have only 40 per cent. of last year's crop, and Western Ontario about the same. The crop in Eastern Ontario will be slightly less than last year. Clean fruit is confined to orchards that have been well cared for and properly sprayed.

The Niagara grape crop promises to be good but late. Kieffer pears are a medium to fair crop, but other varieties from 30 to 40 per cent. normal. Plums in the Niagara district are 30 per cent. of normal crop, but elsewhere in Ontario and Nova Scotia, prospects are good. British Columbia will have a fair crop.

Manure for the New Seeding

(Continued from page 4.)

lined, Mr. Seymour will plan to grow grain before corn. The grain will be seeded to clover, the clover getting a light dressing of manure, five or six loads to the acre. By the time to plow for corn in the spring, the new clover will have made a good growth, which will be plowed under for fertilizer. Following this system, Mr. Seymour believes he will secure just as good corn crops as if manure were applied direct to the corn land in the spring, or has been his practice in the past year. He says that the extra growth of the fertility in the extra growth of clover, will go further. Since our visit to Mr. Seymour's we have learned that at the Central Experimental Farm at Ottawa, lightly dressing their clover manure each fall is a regular practice but there they plan too, to manure the corn land.

Wayside

By

Deliver

NEARLY every day on a farm has had a drover or butcher time this last week into town to the station. Most people is a right and everything and w even in driving c

We started in walking after the and things went to the first street of of the men helping anxious lest the a street or upon sc garden and when the cattle seemed fever and back the speed to the fat twice and finally to give this man reprimand. The conscientious that he do all in any catastrophe, made matters wo As an example of animals started the duty to keep pac made the anima almost surely en where that it show crouching an inte that he should b ers to head the H. His hurrying pa almost sure to aet ter" some other o sorrow.

We all learned it might be brief words, viz., "kiss each side and the we had little or dens or laws w mental agony sec when the cattle was an easy mis along the right st steps at a corner and tendency to ab brought us abrea completed the de

Upon reaching friend expressed if they had not w was the only w Yet I firmly belie could not manag animals into tow was caused by seems to be one of farm life to t that the best res without some t Burnbrae."

Allalfa and C

Dair

(Continued)

life was made b given corn sila without a pland for the produc and 1.34" pound for 55 days after "The average the entire 12 co 8,177 pounds of the most availa freshenings, the corn silage and any grain. They year-on the av corn silage and hay per acre and crops of 1,579 pou

Take Your Opportunity — NOW

What are your prospects as a "hired man"?

How long will it take you to own a farm of your own?

These are questions which every ambitious man must face.

Don't settle in the rut of hand to mouth existence.

Get a FREE HOMESTEAD

Our "Homesteaders and Settlers' Guide," to be had for the asking, will tell you how and where. Write to the nearest C. N. B. agent or General Passenger Dept., 63 King St. East, Toronto, Ont.

When You Write---Mention Farm & Dairy

Wayside Gleanings

By "Burnbrae"

Delivering Cattle

NEARLY everyone who has lived on a farm for any length of time has had some experience in driving cattle that have been sold to the drover or butcher. We had a lively time this last week taking three head into town to the stock yards at the station. Most people believe that there is a right and a wrong way to do everything and we found it to be true, even in driving cattle.

We started in good form, three of us walking after the three dumb critters, and things went well until we came to the first street of the town. Here one of the men helping to drive grew over anxious lest the animals go the wrong street or upon some person's lawn or garden and when we became excited the cattle seemed to catch the same fever and back they turned with much speed to the farm. This happened twice and finally it became necessary to give this man a rather severe reprimand. The man was thoroughly conscientious and extremely anxious that he do all in his power to prevent any catastrophe, but in his anxiety he made matters worse instead of better. As an example of this, if one of the animals started to trot, he felt it his duty to keep pace with it which only made the animal go the faster and almost surely ended in it going some where that it should not go. When approaching an intersecting street he felt that he should be on one of the corners to head the brutes the right way. His hurrying past the animals was almost sure to send them "alter, skelter" some other direction much to his sorrow.

We all learned a lesson that day, and it might be briefly expressed in two words, viz., "keep cool." When we went quietly after the cattle one on each side and the other one following we had little or no trouble. No gardens or lawns were spoiled and much mental agony escaped. We found that when the cattle were not excited it was an easy matter to direct them along the right streets as a few quick steps at a corner or when they had a tendency to stray from the road brought us abreast with them and accomplished the desired result.

Upon reaching the stock yards our friend expressed his delight at the way they had travelled and when that this was the only way to handle cattle. Yet I firmly believe that this same man could not manage to take a number of animals into town without some mishap caused by his own anxiety. It seems to be one of the hardest things of farm life to conquer one's self, so that the best results may be obtained without some thing being amiss.—Burnbrae.

Alfalfa and Corn Ensilage for Dairy Cattle

(Continued from page 5.)

life was made the year that she was given corn silage and alfalfa hay without a pound of grain. On this ration she produced 39.2 pounds of milk and 124 pounds of butterfat per day for 56 days after freshening.

The average yearly production of the entire 12 cows in this herd was 8,177 pounds of milk containing 287 pounds of fat for the 363 days from freshening, their feed consisting of corn silage and alfalfa hay without any grain. They consumed during this year on the average 39.2 pounds of corn silage and 124 pounds of alfalfa hay per day and in addition an average of 1,579 pounds of green soiling crops during the year. The soiling

crops consisted of oats and peas cut green during the fore part of July and green corn in the autumn after the silo was filled. As these soiling crops contained a large amount of moisture, they would probably make the equivalent of about 450 pounds of hay and corn fodder. No grain was fed to these cows during the year these records were made. The corn silage was made from heavily eared corn. Several of the cows in this herd were kept for six years very largely on corn silage and alfalfa hay, a small amount of grain being fed when they were fresh and producing over 25 pounds of milk per day, and most of them made good records during the six years.

When Grain Should be Fed.

"I think this is sufficient data to show the milk producing ability of a ration composed of corn silage and alfalfa hay without grain. It must be distinctly understood that I am not and never have recommended feeding no grain to a cow capable of producing more than 20 pounds of milk a day, and if she is capable of producing over 40 pounds of milk a day she should be fed a heavy grain ration. But this means that the average dairy cow does not need to be fed grain for more than three to six months after freshening if she is fed all the good corn silage and legume hay she can consume as the grain and cheaper feeds than grain, and are certain to remain so in the future unless the population of the world is greatly reduced from what it is at present.

"We must all understand that cows cannot produce a large amount of milk without being well fed, as it takes about three-fifths of the feed consumed by the average dairy cow to simply maintain her body and only two-fifths of all feed given to the cows of the United States to-day is utilized directly in the production of milk. For this reason it is of the greatest importance to feed cows that are capable of producing a large amount of milk an abundant ration, but on the other hand we must not lose sight of the fact that every cow will not produce heavily simply because she is fed a heavy ration, and high priced grain should not be wasted on cows unable to produce when fed a heavy grain ration."

Metal Barn Endorsed.

M. L. Lawson, Northumberland Co., Ont.

I CANNOT speak too highly of the metal barn, as it has many advantages over the old timber one. Its appearance is one advantage, for an attractive barn is a credit to the community in which one lives, and is also helpful in a business way. It is people want to purchase hay, grain, cattle, hogs or any other farm produce, my neighbors can say, "Lawson? Yes, he lives where you see that up-to-date metal barn."

The metal barn is very convenient. There is not a cross beam in the barn. When drawing in, there is no backing down a bridge after the load is off. Just turn around and drive out. In weighing hay, it is so simple. We weigh from the hay car, and put it on the wagon, and thus save handling.

The metal barn is perfectly water and snow proof. It is rigid; I watched mine very closely through the gales of last winter, and there was not a tremor in it.

As regards expense, we found it much cheaper to erect a metal barn. Some one may ask why. Well, if you had to feed a gang of men for the length of time necessary to erect a timber and lumber barn, without counting the much greater cost of material, you could erect with more the metal barn would amount to very little more than half the cost.

1 1/2 H. P. On Skids with BUILT-IN MAGNETO



\$65.-

**3 H.P. \$115.
6 H.P. \$205.**

F.O.B. Montreal or Toronto

The one great, convincing engine offer. Fairbanks-Morse quality—service—dependability— at a popular price tells the story.

"More Than Rated Power and A Wonder At The Price"

Simple—Light Weight—Substantial—Fool-proof Construction—Gun Barrel Cylinder Bore—Leak-proof Compression— Complete with Built-in Magneto. Quick starting even in cold weather. Low first cost—low fuel cost—low maintenance cost. Long, efficient, economical "power service."

See the "Z" and You'll Buy It Go to your local dealer. See the "Z." Compare it on merit—by any standard—point by point. You'll see just how good this wonderful engine is.

The Canadian Fairbanks-Morse Co., Limited



St. John Montreal Toronto Winnipeg Saskatoon Calgary Vancouver

IMPORTANT DEALER SERVICE! When you buy an engine from your dealer you deal with a local representative of the manufacturers. He stands behind the engine he sells. He's responsible to you. He's at your service to see that your satisfaction is secured.

The Germans Use More Fertilizers

than any country in the world. But for this they would have been starved out before the end of the second year of the war.

Let Us Learn Even From Our Enemies

The Motherland is calling on her daughter Canada to send more wheat.

Sydney Basic Slag

will help Canadian farmers to grow bumper crops. The increased yield will pay for the fertilizer and leave a handsome profit.

SEND FOR OUR LITERATURE.

THE CROSS FERTILIZER CO. Limited SYDNEY, NOVA SCOTIA

When You Write—Mention Farm and Dairy



Summer Poultry Hints

NOW that the hot days are with us and the rush of summer work is on, we have noted that on many farms there is a decided tendency to neglect "Biddy" for what is often considered more pressing duties. This is a mistake. The summer months of this year especially should be made to count more than ever. The young chicks should be kept growing, and every hen, so far as possible, made to "do her bit." Instead of killing off all feeders, keep those that will produce summer eggs until they begin to moult in the fall before killing them. Kill only the non-producers, such as old hens and weaklings.

During the hot weather see that the eggs are gathered two or three times a day. Leave the eggs in the sun as little as possible, and market two or three times a week.

Every summer Old Sol is responsible for the death of many young chicks and ducks which, with little thought, might easily be prevented by providing sufficient shade from the hot sun. Get them into some growing crop that will provide shade, green feed and good scratching ground. Colony houses along the side of the rook field or in the corn patch are hard to beat. If no shade is available provide some.

Now is the time for a thorough house cleaning of the poultry house where the hens were last winter. Take out all furnishings, and leave them in the sun for several days. Thoroughly scrub the colony house, disinfect with Zelenole or other good disinfectant, and give a new coat of whitewash before the furnishings are replaced.

Perhaps some one may consider himself too busy at present to give attention to such small matters as these, but he is the wise man who will not neglect them, and the size of many poultry diseases next season may be measured by the attention that has been given to just such small details as these.

Keep the Chicks Cool

COMFORT is conducive to profits. Growing chicks and laying stock appreciate an opportunity to keep cool these days quite as much as do the owners. A practice that is quite common among poultry specialists in southern climates is to move the roosts and nests outside during the hot weather. We have noted a few cases where the same practice has been followed with satisfactory results here in Canada. A British Columbia man of our acquaintance has the nests in the sun on the shady side of the building. Raising the full length of the nests on the outside of the house is a trap door. During the hot weather, this trap is lifted, and the nests are well cooled. In fact, the nests are the coolest place in the house, and the hen can lay in comfort.

In open front houses is excellently ventilated in summer. It is not enough in summer. Where there is a door at one end and a window at the other, the window can be removed and covered with wire netting, and the door left open, or a screen door substituted for it, and the draft across the house will keep the interior cool and inviting. Where such a system of ventilation is not possible, a plan sometimes

followed is to have small doors at the back of the house, so that the circulation can move from front to back and from back to front. These small doors should be up near the plate so that the chickens will see the hens when they are on the roosts at night. Such a method of ventilation is, of course, resorted to only in hot weather, and it should be possible to close these trap doors closely in cold weather, otherwise the draft might result in disease in the flock.—F. E. E.

Chicken Rearing Suggestions

CHICKENS are like corn, they grow best on well cultivated ground. It is a well-proven fact, known to all experienced poultry keepers, that the growing stock will develop faster and be harder and better constituted when under any other conditions. Small flocks of 50, housed in portable colony houses, is the ideal rearing plan for either the commercial farmer or specialized poultry keeper. These houses may be constructed chiefly from cast off lumber, covered with single-ply roof ing paper.

Last season our growing stock was hopped-fed entirely. In the hoppers the chicks had the choice of a mash composed of corn meal, bran and shorts, and in addition in other hoppers, feed wheat and cracked corn. For a while we fed a wet mash of meal, but they ate so little of it that the practice was discontinued. With hopper feeding entirely, the chickens were reared on a minimum amount of labor. These chicks, of course, were reared on open range.

The broiler season is about over. What to do with cockerels, particularly of the laying breeds, such as Leghorns, is quite a hard question. Can we afford to rear them? Prof. W. R. Graham of Guelph, says that a Leghorn will not eat over four pounds of grain for one pound of growth. Hence, if the cockerels were kept till they weighed two and one-half pounds each, they would consume approximately ten pounds of grain. If the labor were then available to dress the cockerels and take them to market, it would probably be profitable to carry them for a time.

Clean, fresh water and lots of shade are essential to the comfort and, therefore, the quick development of the pullets in this hot summer weather. A running brook is the ideal source of water. The next best thing is to chance the water in the drinking dishes two or three times a day. If the cockerels were kept till they drank from the well and cold. If the drinking water is neglected for a single day in the hot weather, the chickens will lose more in that week than they will regain in a week.—F. E. E.

Canadian Eggs on the British Market

J. Forsyth Smith, Trade Commissioner, Liverpool, England.

DURING the years immediately preceding the outbreak of the war imports of Canadian eggs, which had formerly been well known on the British market, fell to negligible quantities. The Board of Trade returns notified the British market with only 14,700 gross in 1911, none at all in 1912, and 1,850 in 1913. Home requirements had so greatly increased, that Canada had become a large importer of eggs, and the total output was readily absorbed at satisfactory prices.

At the same time the increasing competition of continental sources of supply on the overseas market, favored, as they were, steadily growing efficiency in organization for collection

ing, packing, grading, storing, and marketing, lower production costs, and, by a natural advantage of geographical situation, had brought prices to a level that ceased to hold out special attractions to the shipper. The war supplies, the total imports dropping from 21,779,950 gross in 1914 to 1915 to 37,994,806 in 1914, 10,246,926 in 1915, and 6,111 in 1916. Russia in 1915, particularly, had furnished over 50 per cent. of the total in 1913, dropped from 11,453,277 great hundreds in 1913 to 6,870,827 in 1914, 3,074,166 in 1915, and 754,535 or 11 per cent. of the total in 1916. This decrease in supplies from the continent resulted, naturally, in producing high prices and a strong demand for transatlantic eggs, and the greatly increased production of Canadian eggs has enabled our shippers to take full advantage of the situation. In 1914 Canadian egg imports into this country were 2,172,668 great hundreds, or 916,236, and in 1916, 1,431,778.

Considerable complaint was made of the pack of eggs sent forward in 1914, and the resulting condition in which the produce reached the market. These initial disadvantages, however, were largely overcome by the shippers, and at the present time Canadian eggs occupy a very satisfactory position in the eyes of the trade. They are very attractively packed, clean and of the desired color, of good size and weight, and, while they must necessarily rank below Danish and Irish fresh eggs, they are generally superior to all but the best grades of Russian eggs, especially as regards size and appearance. They always command a premium from one to two shillings per case over American eggs.

Some Notes on Sheep Associations

ONTARIO is the banner province of Canada. As she leads in almost every line of endeavor, except in conservative wool marketing. The sheep producing industry is steadily decreasing. Ontario, once the centre of the industry, is decreasing with the rest. During the last two or three years Quebec has attempted to stay the backward movement, and although she cannot boast any increase, she has at least been able to hold her own.

Ontario farmers would do well to study the methods adopted in the Province of Quebec. Macdonald College has played a big part in organizing the sheep interests of the province. Mr. A. A. McMillan, head of the sheep department, deserves special mention. He has organized the growers of the different counties into what are known as wool associations. The wool is collected at a central point and graded by committee. Buyers are induced to come and the object is to secure competition. The district representative looks after the details and is usually the secretary-treasurer of the association.

The experiment so far has proved an unqualified success. There have been some objections to it. Farmers have often to wait a week or so for their money. Methods of overcoming this difficulty are being studied and eventually it will be satisfactory to all concerned. One decided advantage secured is that the sheep owners, often members of the association, receive 10 to 15 cents a pound more than local buyers offer. Another feature is the educational advantages offered to the sheep owners. County speakers address the association on various phases of the sheep industry. Demonstrations in shearing and rolling are given and everything connected with wool raising is covered.

Last year the association began the cooperative marketing of lambs. It began as an experiment and the difference received, between association prices and drover prices was aug-

mentative. This is no more place where the consumer and producer are coming together. One may be too optimistic. It is not a satisfactory plan for wool and lamb marketing to community breeding.

Ontario sheep breeders should organize themselves into county or district associations. It will prove advantageous to themselves, to the industry and to the country in general.

The Feeding of Calves

By E. S. Archibald, Dominion Animal Husbandman

THE quality of the milk from the future herd depend upon the breeding and quality of the calves and even more on the method of rearing. The best of calves both as to type and breeding may, by poor rearing, develop into small, stunted and unprofitable cows, while poorer calves by good rearing may develop into very useful animals. Hence the subject of calf rearing is one of great economic importance.

The following methods with such variations as are needed will give excellent results:—

Remove the dairy calves from the cow at birth. Do not allow them to suck, unless weak or unable to drink, or unless the cow's udder is severely cracked. At the rate of eight to 10 pounds of milk per day, for the first ten days, then start replacing part of the same with skim milk so that when the calf is one month of age, it may be receiving two feeds daily, 12 pounds of skim-milk plus a tablespoonful of finely ground scalded flax-seed jelly.

At three weeks of age feed a small quantity of whole oats, or mangel. Fine clover hay and clean water may profitably be kept before them from this time on.

During the next fifteen weeks gradually increase the skim-milk to 15 to 20 pounds daily. Add the flaxseed jelly other constituents to make a cream substitute as follows: Fine ground flax one part, fine ground oats two parts, ground corn two parts. Feed in the milk divided into two feeds daily at the rate of one-eighth pound at the start and increase to one pound.

Replace the whole oats at four weeks of age with a grain mixture of equal parts bran, rolled oats and ground corn. Start the calves on one-eighth pound per day and increase gradually to one and one-half pounds daily at twenty weeks of age when the skim-milk may be gradually cut off and this grain ration increased proportionately.

Do not expose your calves to heat between six and ten weeks of age. Then in dark cool box until four months of age, after which they may have a night paddock. If fall-dropped calves, keep in a clean, bright comfortable warm box stall. Feed a limited amount of roots or a mixture of roots and silage. Feed salt in limited quantities regularly and water as required.

Full Feeding Pays

SOMETIMES when prices are high and feed is scarce, even good feeders have a tendency to cut down the rations slightly in an endeavor to economize on feed. Investigations conducted by Mr. Emery Ellis, on his Minnesota farm, would seem to indicate that it is always pays to keep the hog on full rations. Mr. Ellis divided his herd of hogs into two lots, one receiving a light feed and the other a full feed of corn. The latter lot was the more expensive to raise and the last the more gains because there were more pounds of gain, though there was less profit per pound.

A Breeder

THIS is not a successful sheep raiser. He finally produced a Champion. The almost as interesting as the sheep itself. The province claims the st. mine mixed in the other man over.

The man was for service and name, date and fully recorded. In due time, the calf who received necessary to development. When year old he was to a man some bargain was the cash and the balance of the registration seemed to be all went to get after when he discovered that the white calf had effaced his servile application to the found that no because it was but it is a true above it may be true could only record forms can at a small cost value is hard to we are using the and Dairy and guards against our satisfaction seller, as well as record for use with

FARM

H. Percy Blanton

From Abroad

IN union there is strength. The United Farmers of Ontario have a motto that is well known. But every farmer should appreciate the organization. Work in advance. The world is not what it was. This is in our hands and in our hands must be in our hands. "Scab" probably in advance. The world is not what it was. This is in our hands and in our hands must be in our hands.

The present United Farmers and similar organizations cover all Canadian counties. They unite the present to attempt to get among the subcommittee out and not only in the unions or units, have its representatives would again have county or similar district should unite, of say, of

A Breeder's Record

THIS is not a tale of years of successful selection and mating by a careful Illinois breeder, who finally produced a Canadian or World's Champion. The record, however, is almost as interesting and it is the belief of the writer that it is a true example of what many other breeders in the province are doing. A friend of mine tells the story of how he became much mixed in his dealings with another man over a young bull.

The dam was taken to a neighbors for service and upon coming home her name, date and name of bull was duly recorded. Where? On the stable wall. In due time she had a nice bull calf who received every attention necessary to give him growth and development. When he was about one year old he was advertised and sold to a man some distance away. The bargain was that he paid two-thirds cash and the balance when he received the registration papers. Everything seemed to be alright until the breeder went to get the animal registered, when he discovered that the boys had white washed the animal's name and effaced his service record. Upon application to the owner of the sire he found that no record had been kept because it was not understood that the cow was registered cow. However, things were fixed up approximately correct and the animal is registered.

To some this may seem far-fetched, but it is a true case and as stated above it may be one of many if the truth could only be known. Good record forms can be purchased or made at a small cost and labor and their value is hard to estimate. Personally we are using the form sold by Farm and Dairy and like it very much. It guards against such mistakes and ensures satisfaction to both buyer and seller, as well as a valuable reference record for use with the herd.

FARM CHATS

H. Percy Blanchard, Hants Co., N.S.

From Above or Below

IN union there is strength. The United Farmers of Canada can control every legislature in Canada. But every farmer is needed in the organization. Voluntary organizations in advantageous locations is not enough. The workmen have discovered this; and in consequence every workman must be in the Union or be a "Scab." Probably the time has not yet come for this among the farmers; personally I would not like to see conditions such as to compel it. But there are hundreds of thousands of indifferent farmers, who would be in the Union, and be valuable members if the Union were brought to them. Whereas, if we wait for the farmers of each different settlement to unite of their own accord, we will wait till doomsday. For that reason I think we should organize from above.

The present United Farmers' of Ontario and similar ones of the West should organize the Supreme Union to cover all Canada. Its present functions might only be as a binder pole to unite the present Provincial Unions, to attempt to get uniformity of system among the subordinate unions; and to get out and organize the Dominion, not only in Provincial, but in local unions or units. Each Province should have its representative official, who would again have a subordinate in each county or similar district. Then the district should be divided into local units, of say, three miles diameter,

that is to include a "neighborhood." Every farmer should be induced to be a member.

There is a gambling game, I am told, in which, if one has not attractive cards, he can "set out" and let the others play. So, a farmer in the local union, might not be interested in a car of fertilizer or seed grain. But through the secretary or manager, such as wanted fertilizer or seed or whatever else, would make their deposit, and send on their order, generally to the Central. Any group of members could combine to buy or sell through the manager; and a commission would pay his salary. No "dormant" member need subscribe a cent either as fees or dues; nor be responsible for any other member's obligations. The advantage of the "dormant" member is that he is open to argument. In time, he will be selling and buying through the organization, and in the meantime he is kept sweet.

Some day I hope to see one million copies of the United Farmer's Bulletin distributed every week free. Perhaps only one sheet, a foot square. It need not be printed all in one office. In fact it would be better to be provincial, so as to treat local subjects better. Leave the farmer's magazines to handle farming. Treat on organization, cooperation, buying and selling, and standardization of crops for better selling; the aims of the Unions, and the rights of the farmers. Reaching every farmer, it must serve as an uplift to the toiler; an energizer to the

slotful; and a word of cheer for everyone. Organize: and organize from above.

Note.—Our contributor is evidently not aware that a Central Union of all the independent farmers or organizations of Canada is already in existence in the Canadian Council of Agriculture, with which are affiliated the United Farmers of Ontario and the organizations of the prairie provinces. The provincial organization have already organized many hundred local clubs, where local effort would probably have been ineffective to have constituted the organization, and of course, much yet remains to be done.—The Editors

Valuable Misinformation

DEER FOLKS: Now I know why editors go mad. I been trying to run this paper while the editor is on his vakashun. For three (3) days and nites I ben reading questions and trying to answer them, and if I don't quit I'll be going around talking to myself. I'm going to answer a few more then go to the ball game.—(Mimie, the office boy.)

1. What is limberneck? (J. Jones.) Limberneck in the country is a strange disease of fowls and chickens. In the city it is a disease of human persons caused by watching fowls and chickens.

2. Do small cows give condensed milk? (Mabel B.)

No, Mabel. Condensed milk is made by trying to get a quart of milk into

a "quart milk-bottle."

3. Please tell me how hash is made. (W. M.)

Hash is not made. It accumulates. 4. Is it all right to feed hogs corn-in-the-eat? (G. K.)

No. Put it in the trof and let them help themselves.

5. I am in love with a homely girl who works for us, but she don't seem to care for me, while a pretty girl with lots of money wants to marry me. What shall I do? (Will M.)

Marry the one you love, and send me the name and address of the other one.

6. My hair is beginning to fall out. What can I get to keep it in? A sack.

7. Please tell me how to raise a nice fat hog of about 600 pounds: Get a derriek.

8. How can I tell when the water is the right temperature for bathing baby? (Young Mother.)

If the kid get red and hollers, then the water is too hot. If he gets blue and shivers, it's too cold.

9. I am 40 years old, have a nice little farm, and am thinking of taking a wife. What would you advise? (Old Bat.)

I would advise you to be kerful whose wife you take.

10. Our old red bull is chasing one round a forty acre field. What shall I do? (Mike F.)

I don't know, but don't give up, Mike. The Editor will be back in a week.—Successful Farming.

Champion "X" Plug Price 2.75

All New Fords Have Champion "X" Plugs

The fact that all new Ford and Maxwell cars are exclusively equipped at the factory with Champion Spark Plugs is the best reason in the world why owners of these cars should replace with Champions.

The manufacturers selected Champions because they insure maximum efficiency in their motors—prevent loss of compression and are absolutely dependable in emergencies. The Champions illustrated were developed especially for service in Ford and Maxwell motors and efficiently meet their exacting requirements.

Champion Toledo

Have been chosen as factory equipment by over one hundred motor car manufacturers with a combined output of eighty per cent of all automobiles made.

Be guided by the selection of the engineers who made your motor when replacing the Spark Plugs in your Ford or Maxwell.

Dealers everywhere sell Champions specially developed for every make of automobile, motor boat, gas engine or tractor.

Be sure the name "Champion" is on the Champion—it your guarantee of "Complete satisfaction to the user—Free Repair—Replacement or Money Back."

Champion Spark Plug Co., of Canada, Limited
Windsor, Ontario.

All New Maxwell Cars Have Champion Regular Plugs

Champion Regular for Maxwell Cars Price \$1.50

Farm and Dairy

AND
Rural Home

"The Farm Paper of Canada's Dairy Farmers"
Published Every Thursday
The Rural Publishing Company, Limited
Peterboro and Toronto



SUBSCRIPTION PRICE, \$1.00 a Year. Great Britain, \$1.20 a year. For all countries, except Canada and Great Britain, add 50c for postage.
ADVERTISING RATES. If carried on one page, 12 inches, one copy required. One page 12 inches, one column 12 inches. Copy required on Saturday preceding the following week's issue.
Peterboro Office—Lester and Water Sts.
Toronto Office—7 McCall Street.

United States Representatives:
Stockwell's Special Agency,
Chicago Office—People's Gas Building.
New York Office—Frisbie Building.

CIRCULATION STATEMENT.

The paid subscriptions to Farm and Dairy exceed 12,000. The actual circulation of each issue, including free copies of the paper sent to subscribers who are not paid for, is approximately 25,000. The number of copies, however, varies from 22,000 to 23,000 copies. No subscriptions are accepted for less than the full subscription rates.
Sworn, detailed statement of circulation of the paper, showing its distribution by routes and provinces, will be mailed free on request.

OUR GUARANTEE.

We guarantee that every advertiser in this issue is reliable. We are able to do this because the advertised columns in Farm and Dairy are as carefully our readers, we turn them over to the advertiser. Should any advertiser fail to pay for his advertising, we will make good on our part in advance. Should any such transaction occurs within one month from date of this issue, that it is reported to us within a week stated. It is a condition of this contract that in writing to advertisers you state, "saw your advertisement in Farm and Dairy."
Refuge shall be made for our friends through the our subscribers, who are our friends through the medium of these columns; but we shall not attempt to adjust trifling disputes between subscribers and debts of honest bankrupts.

The Rural Publishing Company, Ltd.

PETERBORO AND TORONTO

"Read not to contradict and to confute, nor to believe and take for granted, but to weigh and consider."—Bacon.

Britain's Message to Canada

LORD RHONDDA, Britain's Food Controller, has sent the following stirring message, through our own Food Controller, Hon. W. J. Hanna, to the Canadian people:

"We look to the resources of Canada, and to the indomitable energy of Canadians, for an answer that will shatter Germany's threat of starvation. In normal times the Mother Country is dependent on your Dominion for a large part of its food supplies. War has increased this dependence to such an extent that it is now vital for the United Kingdom and the Allies in Europe to obtain from Canada foodstuffs in far larger quantities than under peace conditions. It is therefore most necessary that our effort and far-reaching economy, with their attendant sacrifices on the part of Canadians."

That, like ourselves at home, the pick the best of the world share in the front line of battle, and that, therefore, you are faced with the difficulty of a supply of labor. I also realize that an increased export of food supplies must surmount all obstacles, and that the harvest, as far as human labor can achieve, will be a striking demonstration of Canada's efficiency and determination. The willingness of the Canadian people to permit control of their products for purposes of Allies, as tending to increase the supply and to regulate prices. The certainty that we can rely on your whole-hearted cooperation, not only in increasing production, but in the equitable adjustment of prices, gives me the greatest encouragement. I most heartily wish you every success in your all-important work."

This statement is addressed to all the people of Canada. Its main appeal is to our farmers, and we are glad to be able to assure Lord Rhondda that Canadian farmers are working harder than

FARM AND DAIRY

any other class in the community to maintain and increase production. We wish that we could add that the help so freely promised by our cities early in the season were forthcoming now, that harvest is on and the need is great. But, for some reason or other, the farmer is, as usual, thrown back on his own resources. Farmers who put in more crop than they can harvest on the strength of city assurances of a supply of labor, feel that explanations are due them.

The Problem of the Farm

Under this heading the Toronto Globe, in a recent issue, says editorially:

"The general average of farming requires to be raised in this country, and this involves greater attractions for hired help. Not wages only, but the housing and social conditions, need to be improved before labor is attracted to the farm. The story is told of a Devonshire farmer who heard his hired help singing to a very slow scythe accompaniment: 'Barley and water can't go any faster.' Taking the hint, he changed the diet, and next day he heard a new song in fast time: 'Dacon and eggs—mind your legs.' The moral is one that will not be lost on the farmer who believes that efficient labor is contented labor. Much may be done to attract families to the land, first in the capacity of hired help, and later as farmers. The great problem of the high cost of food begins and ends with the farmer. The maximum utilization of the soil, efficiency in marketing—these are the trunk lines to successful farming and cheap food for the millions."

It may be possible to cram more ignorance of agricultural conditions into a single paragraph than is contained in the above, but we do not see how it could well be done. No one knows better

Work For the U. F. O.

EDITOR, Farm and Dairy: On Thursday last Hon. F. G. MacDermid, Minister of Public Works, announced that preparations are being made to commence next spring the construction of the proposed automobile highway from Windsor to Montreal. If the United Farmers of Ontario have any influence in public affairs in this province they will see that this preposterous and extravagant outrage is prevented. The proposed road, which is to cost over eight million dollars, will not be of the slightest benefit to farmers, yet they will have to pay the greater portion of the cost by direct taxation. All things considered, it is the wildest scheme of useless expenditure ever proposed by an Ontario government.—H. J. Pettypiece, Forest, Ont.

than the farmer that good wages and attractive living conditions will draw labor to the farm. The problem of the farmer is to pay these wages, provide the attractions which the Globe considers necessary, and keep out of the poorhouse himself. It is a fact well known to all competent observers of farm conditions that if a farmer allows himself five per cent. interest on his investment he has little, if any, more returns on his labor than he pays to his hired man. This does not apply to the inefficient or wasteful farmer, but to farmers of the better class, men who are well read in agricultural science and are up-to-date in their farm practice. In no other business in Canada are the labor incomes of employer and employed on such a parity as they are on the farm. In the face of conditions such as these the paragraph quoted from our city contemporary, referring as it does that farmers as a class are growing grinding their help, is, to say the least, unjust. Perhaps the rural survey which is being undertaken by the Ontario Department of Agriculture this summer will help to show a few of the farmers' critics just where "the problem of the farm" really lies.

August 2, 1917.

August 2,

Mr. O'Connor's Report

THE interest created by what is now known as "The O'Connor Report," made further action on the part of the Government necessary; a commission has been appointed which will conduct a fuller investigation into the cold storage business of the country. Briefly, Mr. O'Connor claimed that Canadian packing houses were making undue profits out of the cold storage business, and that the business had become centralized to such an extent as to be a menace to the country, although he did not go so far as to state that any combine among packers existed. The Wm. Davies Company, in their reply to Mr. O'Connor, which was published in Farm and Dairy last week, claim that his report was based on altogether insufficient evidence, and while they proved that Mr. O'Connor lacked important data, Mr. Fox, speaking for the Company, has, we believe, failed to satisfy the public that the packers' profits are as moderate as they claim.

We know that it is possible, on a great turnover, to show wonderful profits on capital investment, while at the same time the profits on the business transacted has been very moderate. If the profits of the Wm. Davies Company and other packers are due to efficiency and large scale operations, then the public has no reasonable grounds for objection. If, on the other hand, the business has become so centralized that a combine exists, and the packers are able to set the price to the farmer and to the consumer as well, most drastic action on the part of the Government would be justified. Farmers and consumers have both long felt that great prices have been manipulated, and the O'Connor report offers an excellent opportunity to probe into the subject more deeply. One result of the publication of Mr. O'Connor's findings should bear immediately in a cessation of the trade of abuse to which farmers have been subjected in many quarters, as a result of the high cost of living.

Progressive Agriculture

THE farmers' platform of the Canadian Council of Agriculture, published in the June 28th issue of Farm and Dairy, might well be styled the platform of democracy and the square deal. By their general adherence to the principles of true democracy as laid down in this platform, Canadian farmers have won the right to be considered the most progressive body of citizens in Canada and perhaps in the world. We are not alone, however, in our appreciation of the advisability of such great reforms as the substitution of direct or indirect taxation. The farmers of Denmark are almost a unit in demanding taxation reform. In many districts of South America, in Australia and in New Zealand, organized farmers have been throwing their influence into the scale on behalf of direct taxation. In the United States the powerful Farmers' Non-Partisan League and the Washington State Grange have declared for the taxation of land values. The most recent addition to the ever-growing body of farmers who are calling for just taxation, comes from away down south in Texas. On May 20th the Farmers' Institute of Potters Co., Texas, adopted the following resolution.

"Resolved, That the Farmers' Institute of Potter County, Texas, do recommend that all rental values of vacant lands and such others as are not put to their best use, be, as are the soldiers, conscripted into service of the government while in this unprecedented emergency. And that we recommend as to methods for the easiest, cheapest and fairest, as has been demonstrated in many localities, the annual taxation of every parcel up to its full rental value, and the exemption from any taxation of all improvements and personal property belonging to the user."
And yet there are those who speak of the farmer as unprogressive in his political ideas and who actually expect that the strongest opposition to the taxation of land values will come from the country districts.

Making t

R. J. Messer

THE man

ing his

lives on a

spiritually

nizes no a

the accum

In the ca

There is n

tunity for

in the coun

for the un

nine-tenths

The practi

ideas of imp

of course de

circumstanc

only from

grounds, loc

driveways, h

labor availa

to pay for t

clination, or

principal thi

A fundame

consist of c

certain well

out of sight

most cases w

rather than

the cleanin

cumulation

wood, which

is rot. The

and rail fence

ing up of w

these fence

most wire fence

a good invest

pend some

well as some

of the wire fence

increasingly

constantly re

ference, save

repairs, and

covered by the

We have a cle

nest field bu

summer wood

sary evil. Th

This should

The average

profitable, in

publish, in th

ings and in

pay well for

space which

Where Do

So far our

for the exper

money in incre

or in dollars m

To go farther

velop qualities

look for reward

than the mere

qualities will

laid-out appro

buildings, in le

in the growth

ornamental tre

tional to the

A well-defin

highway to th

beginning. By

of a certain

gravelled and

lines are avoid

If possible, hav

trees on each

of drives or w

lines are avoid

In this, as w

application is

in the country

and where the

10 rods from

with two outl

curved to pass

trance, enclos

forms a pleas

residence. A l

this driveway,

might be used

the lawn. Whe

Making the Farm Home More Attractive

R. J. Messenger, Annapolis Dist., N.S.
THE man who loves the beautiful and puts some energy into making his surroundings attractive, lives on a higher plane, morally and spiritually, than the man who recognizes no standard of enjoyment beside the accumulation of dollars.

In the case of the urban dweller, there is in most cases measure opportunity for landscape improvement, but in the country there is little excuse for the unattractive appearance of nine-tenths of the home surroundings. The practical problem of carrying ideas of improvement into effect must depend largely on the circumstances of each individual, of the only from the character of the grounds, location of buildings and driveways, but also the amount of labor available and the wherewithal to pay for that labor. The will, inclination, or desire is, however, the principal thing.

A fundamental line of action would consist of confining the woodlots to certain well defined limits, if possible out of sight of the highway. This in most cases would be remunerative rather than expensive, inasmuch as the cleaning up would lead to the accumulation of considerable summer wood, which too often lies about until it rots. The abolition of old board and rail fences provides for the cleaning up of weeds and bushes along these fence sites and the erection of new wire fences. We have here also a good investment, while we have to expend some time in cleaning up, as well as some money in the initial cost of the wire fence, we save the ever increasingly valuable time used in constantly repairing the old wooden fence, save material used in these repairs, and gain land which has been covered by the sprawling old fence. We have a cleaner farm and a slightly neat field boundary, besides a lot more summer wood. Fences are a necessary evil. Then, as far as possible, they should be neat and attractive.

The average farm has considerable waste land, unshut as well as unprofitable, in stone piles and heaps of rubbish, in the vicinity of the buildings and in the fields, which would pay well for the cleaning up, in the space which would become available.

Where Dollars Don't Count.

So far our improvements have paid for the expenditure of time and money in increased value of the home, or in dollars more or less immediately. To go farther, the individual must develop qualities of mind and heart that look for rewards on a higher plane than the mere pocket getter. These qualities will find expression in well-laid-out approaches to the house and buildings, in level and well-kept lawns, in the growth of flowers, shrubs and ornamental trees, in extent proportional to the time and desire of the owner.

A well-defined driveway from the highway to the house or buildings is a beginning. By "well-defined" is meant of a certain uniform width, well gravelled and marked by a clean line between the gravel and the road, and, if possible, having a row of ornamental trees on each side. In the laying out of drives or walks, severe, straight lines are avoided as far as possible. In this, as well as what follows, the application is as forcible in towns as in the country. If space will admit, and where the house is not more than 10 rods from the highway, a drive with two outlets to the highway, is curved to pass before the main entrance, enclosing a well-kept lawn, and forming a pleasing foreground to the residence. A low hedge could skirt this driveway, and possibly another might be used at the outer border of the lawn. Where the house is within or

three rods of the highway, it is better, if possible, to have the drive lead around the house. In any case, it should be kept clean of weeds and have its limits well defined.

Grounds.

Whenever possible, the lawns should be laid out along generous lines, so that they have a broadening effect to the front. A little lawn of the same or lesser width than the house, laid out in severely straight lines, is better than nothing, but remember where land is plentiful, and remember that the beauty of a lawn consists in keeping it moved and green.

A well-trimmed hedge, whether of the yewgreens or of leafing varieties, adds much to the appearance of the grounds. Circumstances may differ, but in most cases a hedge presents the best appearance and allows a better view of the grounds if it is not allowed to grow more than three and one-half feet high. In some cases, two feet high is better than higher.

Shrubs, flowering at different seasons, add much to the beauty of grounds. After they once get a foothold, little attention need be given them. They should not be in the lawn, nor in straight lines, but rather grouped in the corners or near the border. Spiraea, honeysuckle, Siberian pear, syringa, weigela (variegated) are all good border shrubs. Group the taller growing shrubs behind the smaller ones, and if flower beds are to be planted, these may be in front of the smaller shrubs. The rising background gives a pleasing appearance from the lawn.

Not least in the scheme is the necessity for keeping all the buildings painted with some pleasing color and in good repair. The latter, of course, is a good sense investment.

How Big a Silo?

THE size of the silo should be such that at least an inch layer is used each day. If less is used moiding and spoiling may result. The warmer the weather the greater the depth of silage that should be removed. In the winter 500 pounds should be removed daily from a 14-foot silo, which would make 40 pounds for 18 dairy cows, or 20 pounds for 17 beef cattle. In summer half as much more should be removed. It will require 18 cows fed 40 pounds a day to consume this amount. Silage is a valuable summer feed. Many are using it for this purpose and especially to help out when the pasture is short. Some build a summer silo and make it smaller in diameter than the winter silo, so that a deeper layer can be removed daily. The more capacity desired it is secured by increasing the depth. In winter at least 350 pounds should be removed from the 12-foot silo and 700 pounds from a 16-foot silo. In summer the amount removed daily from the 12-foot silo should be at least 500 pounds and from the 16-foot silo, 1,000 pounds.

Location of Silo

THE silo should be located with a view to making it convenient to remove the silage. If possible the silo should be at the end of the feeding alley so that a truck can be run up to the silo for filling and then moved along in front of mangers in distributing the silage. Twelve cows fed 40 pounds a day will have a quarter of a ton of silage. It is best to have the silo outside of the barn but connected to the barn with an alley way or place so that the chute will just reach the barn. The silo inside the barn takes form, enclosing a well-kept lawn, and forming a pleasing foreground to the residence. A low hedge could skirt this driveway, and possibly another might be used at the outer border of the lawn. Where the house is within or



GET YOUR DE LAVAL NOW

WHETHER you are selling cream or making butter, if you have no separator, or are using an inferior or half-worn-out machine, you are wasting cream, time and labor every day you delay the purchase of a De Laval.

You can't afford to wait another week. It means too much loss with butter at its present high price, and the importance of saving time and labor. Let the De Laval start saving cream for you right now, and it will soon pay for itself!

See the nearest De Laval agent right away and let him show you what the De Laval will save for you. If you do not know the De Laval agent, write direct for my detailed information.

The De Laval Company, Ltd.
 Largest Manufacturers of Dairy Supplies in Canada
 MONTREAL PETERBORO
 WINNIPEG VANCOUVER

Peter Hamilton Ensilage Cutter and Blower

Take no chance of having your ensilage spoil this fall. Buy your ensilage filler, and put in your corn in your silo at the right time, and in the right way.

MACHINES FOR EVERY NEED

We have a machine suited to your needs, and can tailor-fitters and feeders of different sizes. All these machines are designed to cut the maximum amount of feed in the shortest time, and with the least power. Our blower machines have cast-steel knife wheels, which will not blow up under any condition. Learn more about these machines by sending to-day for our free booklet.



PETER HAMILTON Co., Limited
 Peterborough, Ont.

A FORTUNE IN POULTRY



Increase your egg yield by purchasing

A CHOICE PEN

of one of the high record
 of such as Wyandottes,
 Rocks or Red Stars.
 Each pen contains 50 photos of
 the best birds, and contains
 and tonic formulas.

Our 272 Page Kind free.
 L. R. Guild, Box 76, Rockwood, Ont.

THE instant lighting of any part of your home, barns, sheds is a matter only of pressing a button—if you have Delco-Light. And such a flood of clear, clean, brilliant light. Cheerful, happy light. Good for eyes. Good to keep the children at home on the farm. No matches. No smoke. No oil. No lamps or lanterns to clean.



DELCO-LIGHT ELECTRICITY FOR EVERY FARM

Delco-Light gives pleasure and health on the farm. But it also works for its keep and pays for itself—does you done more quickly—no lantern to hold, better light. Electric power does in half the time the milking, separating, churning and butter making. Saves manual labor, saves operating a pump. Adds all city conveniences to the farm home.

Delco-Light is efficient. It delivers all the current you need all the time, at small cost. Delco-Light, when strictly necessary, is little to get out of order. Little to be in operation. From a lever—it starts. Stops automatically when storage batteries are full. Need be operated only two or three times a week. Full information and free literature can be obtained from your nearest distributor. Price complete, No. 208—2485 and No. 216—2485.

The Domestic Engineering Company - Dayton, Ohio

CANADIAN DISTRIBUTORS

C. H. Rooke Ltd., Toronto; Breen Motor Co., Winnipeg; B. L. Robinson, Calgary; Langley & Haslett, Vancouver; Provincial Electric Light and Power Equipment Co., Kentville, N.S.



THE UPWARD LOOK

Patience

ONE day is with the Lord as a thousand years, and a thousand years as one day.—II Peter, 3:8

Lately I had the great pleasure of going through the wonderful Ansable Chasm. The sides are very high and almost perpendicular and in many places do not seem to be more than 20 feet apart. In little crevices and niches of these mighty rocky cliffs are beautiful flowers and dainty ferns. Through the bottom runs a roaring turbulent mass of water, now dashing down in a great misty waterfall, again rushing in foaming rapids; now whirling in swift eddies, or moving on in deep blackness. Sometimes one walks along on the very edge of this river. At other times the trail leads high up, along a narrow ledge from which one looks up and then far down.

As one looks they can but wonder how many, many years that river has taken to work its way down to that depth, through that great rock? Every little while one would see deep gullies opening on either side, at the end of which were traces showing that at one time water had rushed down. How many centuries had that water taken to work its way back to such a distance? At one place we saw a very deep dry well-like cavity, with smoothly worn sides. How many ages ago had that revolving boulder taken to make that empty, smooth-sided well?

If our Creator takes such unthinkable time to work His changes and His wonders in His world of nature, can we not have patience and faith to know, that so slowly but surely do His plans work out for His highest creations of all.—His loved human beings.—L. H. N.

This Affects Your Pocket-Book
James M. Munro, Thunder Bay Dist., Ont.

I HAVE no sympathy with this continual cry about the high cost of living. If we took a few moments to consider and change our ways, we would soon have this vexed question solved. We throw away or feed to the pigs much valuable food that should be used on the family table, as for instance, milk, shorts, bran and potato peelings. Science plainly proves the following: That one quart of milk contains as much human nourishment as two pounds of chicken or two pounds of beefsteak. Prevailing prices here, milk 10c per quart, chicken 25c per pound, and beefsteak, 30c per pound. Again, take the skim milk that is considered almost worthless. We are taught by science that it contains the bone and muscle forming elements. Yet how few use a jug of milk on the meal table instead of the nervy wrecking tea and coffee. The milk is thrown to the pigs, and the tea given to the children, whereas it should be vice versa.

The bran and shorts—the muscle and bone forming elements are separated from the wheat, and the starchy part ground into flour. The former is fed to the cattle, the latter is the family; whereas the wheat should be ground and used for bread and porridge, etc.

Every farmer could easily have his five or 10 hives of bees, and have from 500 to 1,000 lbs. of honey laid by in the pantry to be used in a great variety of ways, instead of buying out the same amount of hard cash for sugar. Honey can take the place of sugar in making ice cream and is superior. It is excellent in making wedding cakes, etc., keeping them moist and free

from mould and mustiness. And here is a hint to those sending cookery to the boys in France. If you substitute honey for sugar and use half the eggs and milk your recipe calls for, you may rest satisfied that it will neither mould nor dry out in transit. We have had very satisfactory reports of honey cookery sent to friends in the trenches. We prefer soda and cream of tartar to baking powder in honey cookery. If you use a baking powder recipe, add a pinch of soda.

Forty years ago honey sold at 40 cents a lb, and butter at 10 cts. a lb, but now honey sells at 15c a lb, and butter at 50 cts. a lb, so it doesn't require much argument to conclude which is the cheaper.

Once a year we are taught by government experts that the better part of 'the potato lies next the skin; so that those who take off a thick peeling, throw to the pigs or on the garbage heap the better part of the potato.

Is it any wonder the human family has poor bones, poor teeth, poor health and a poor power of body? Carlyle well said that "only one person in 5,000 thinks."

Destroying Household Pests

AT some seasons of the year, probably when it is damp, or for some reason of which we are not aware, our homes occasionally become infested with insect life of some kind, such as ants, beetles, flies, bedbugs, etc., or that troublesome pest, the mouse. Very often under such conditions, we can recall that we read something one time on the subject of eradicating ants, mice or whatever it may be. Try as we will, however, we cannot bring the suggested remedy back to our minds. Below are several methods of doing away with these pests and we would do well to keep them for future reference.

Beetles may be destroyed by using equal parts of sugar and plaster of Paris mixed, and placed in heaps on the floor or wherever they appear.

Flies will leave the screen door in the kitchen if kerosene is rubbed on the wire screening. Peppermint and oil of lavender put in an atomizer and sprayed around a room is also supposed to be good. Sticky fly paper is another tested catcher. Above all things, do not use poison fly pads as many children are poisoned every year by coming in contact with the poisoned water from these fly pads. Best of all, keep all waste matter around the home disposed of so that flies may not be attracted.

Ants may be driven away by washing the places where they ants frequent with boiling water into which bay leaves have been dropped. Care must be taken that the steam from this mixture does not get near the eyes. For red ants, use hot alum water in the proportions of two pounds of alum to three quarts of water and apply to crevices liberally. Kerosene and water poured into ant holes around the house will destroy them.

The painstaking use of the liquid from crude rosin cut with kerosene, is effective in ridding a house of bedbugs. Vaseline is sure death to them, but every crack and corner must be reached. Another way is to fill a spray with one teaspoonful of carbolic acid and one quart of benzine and spray articles and bed very freely. Quicklime and the white of an egg mixed is also supposed to be good.

Flies are driven out by using lime or cayenne pepper, or stroking the floor with green pennyroyal, or scalding the floor with oil of pennyroyal, mixed with hot water. Another way is to close up the room and burn sulphur candles. Sticky fly paper will catch some.

Mice will not go where sprigs of pep-

NO TROUBLE IN WET CORN OR EVEN IN THE RAIN

In the fall of 1912, we purchased one of your Climax B mounted machines. We filled twenty-eight silos, doing it with a 13 horsepower steam feed. In one case, we had to elevate it 40 feet. The season was very wet and corn was hard to handle but we had no trouble to elevate even in the rain. Our customers said that they never saw a machine do the work like it. The machine is still making friends and doing first class work. We heartily recommend it to any intending buyers.

HERD BROS.,
Peterborough, Ont.

Wilkinson Climax "A"
Mounted Pneumatic
Ensilage and Straw Cutter

Handles either green corn or dry straw equally well and is the only successful combination machine of this capacity made in Canada.

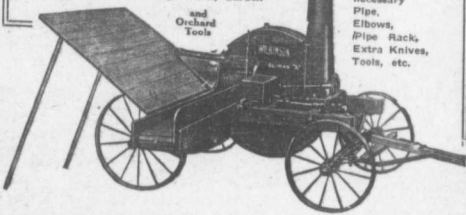
Requires less power than any other machine of the same capacity.

13-inch mouth, rolls raise 8 inches and set close to the knives, making a solid compact cutting surface.

Material cut and blown at the same time. Fans are attached to knife wheel. Everything cut, no lodging on arms, none left in the fan case.

Ask For New Booklet Illustrating Each Point
The Bateman-Wilkinson Co., Limited
40 Symington Avenue, Toronto, Canada.
Wilkinson and Iron Age Farm, Garden

and Orchard Tools



- Friction Drive.
- Reverses Instantly.
- Babbitted bearings.
- Steel slat feed run set low.
- Straight, flat, thin knives easy to sharpen, takes less power to operate.
- Knife has forward shear cut.
- Heavy knife wheel, with fans cast into it.
- Includes necessary Pipe, Elbows, Pipe Rack, Extra Knives, Tools, etc.

THE GILSON

Gilson Ensilage Cutters



Cut silage perfectly, and at a very low cost of operation. Gilson knives are made of the best quality of steel. They make a fine, uniform silage that is very palatable and nutritious. They make a fine, light green silage, requiring less power to feed. The machine is built of heavy steel, and has a strong, rigid construction. Like our other line of cutting machines, it has low power consumption. Mechanics' preference and high quality of material mean long life—1000 hours of use and low cost of operation. Our new illustrated catalog gives facts showing how "The Gilson" can save you money at cutting time. Send for copy to-day.

GILSON MFG. CO., Ltd.
237 York Street, Guelph, Ontario

BETTER TRAINED MEN AND WOMEN
are being demanded in every walk of life. It is the work and the pride of

ALBERT COLLEGE
BELLEVILLE, ONTARIO

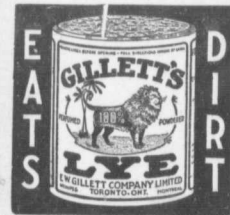
to make its students 100 per cent. efficient, physically, mentally and spiritually. Complete courses in Literature, Music, Expression, Art, Theology and Physical Culture. Commercial and Stenographic Department under the direction of a trained accountant, teaching the most modern of accepted business usage.

A Scholarship in Agriculture

is one of the many valuable scholarships awarded. Write for calendar, stating course you are interested in. Fall term commences September 10th.

E. N. BAKER, M.A., D.D.,
Principal.

When You Write--Mention Farm and Dairy



HYLO-SLO

Sweet Fresh Ensilage
down to the last forkful

THE HYLO-SLO is perfectly all-rite. No fumes or special ensilage around the walls. Convenient and perfect for all uses, adjustable without hammer or wrench. Made of Guaranteed Long Leaf Loblolly Pine. Built to last a life-time. Clean right when empty.

Write for prices and catalogue.
AGENTS WANTED
Gleno Mfg. Co. Ltd. 47 York St. Toronto, Ont.

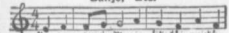
MAKE YOUR BIKE A MOTORCYCLE

At a small cost to convert your **Atalanti** motorbike into any bicycle. Easy to attach. No tools or tools required. Write today for free **FREE BOOK** describing the SHAW Bicycle Motor Attachment. Motorcycles, mopeds, and second-hand, \$15 and up.

SHAW MANUFACTURING CO.
Dept. 138, Galeburg, Kansas, U.S.

MUSIC TAUGHT FREE

By the Oldest and Most Reputable School of Music in America—Established 1808. Piano, Organ, Violin, Mandolin, Guitar, Banjo, Etc.

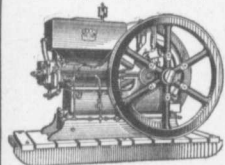


Beginners or advanced pupils. One lesson weekly. Illustrations make everything plain. Only expense about 10¢ per day to cover cost of postage and music paper. Write for FREE booklet which explains everything in full.

America School of Music 78 Lakeside Building, Chicago

Brantford Kerosene Engines

1½ to 30 H. P.
Stationary, Mounted, Tractor



These engines are the perfected product of years of study and experimentation with Internal Combustion Engines, and give a demonstrated success on thousands of farms throughout Canada. Get one this season and let it replace your hired man. It's a glutton for work and its running cost is little, as it runs on coal oil or naphtha.

We also manufacture a full line of Grain Grinders, Saw Frames, Pump, Tanks, Water Boxes, Concrete Mixers, and other machinery. Catalogue of any line mailed on request.

GOULD, SHAPLEY & MUIR CO., LTD.
Brantford, Wainipeg, Regina, Calgary

When You Write—Mention
Farm and Dairy

permit are laid. If the holes can be found, fill them with a soap rolled in red pepper, or fill them with broken glass and plaster of Paris. Chloride of lime will also drive them away.

Appreciation, Enthusiasm and Perseverance

Miss R. M. McKee, Household Editor, Farm and Dairy.

IT does us all good to get out and meet new people and make new friends. Our outlook on life is broadened, we get out of old ruts, and are led to take a new interest in things in general. A week or two ago I spent a pleasant day at Cambridge, Ont., with my friend, Mrs. Frank Webster, who no doubt is well known



Three Enthusiastic Institute Officers.

Cambray Women's Institute is to be congratulated on having so many of the young girls of the community taking an active interest in the work. The instructor shows three of their live officers. Reading from left to right they are: Miss Jean Manning, President; Miss Emma Moyse, First Vice-President, and Miss Bernice Winder, Secretary.

—Photo by Household Editor.

to many of our readers. Cambray is only 35 or 40 miles west of Peterboro, and does not take long to make the trip. Upon arriving at Cambray station, I found Mr. and Mrs. Webster waiting to take me to their home in their car. They had some business to attend to in Lindsay, and I motored back the seven or eight miles to Lindsay and were at the Webster home in good time for dinner. This is but one example of the time which can be saved when an automobile is part of the farm equipment.

The purpose of my visit to Cambray was two-fold: First, to meet Mrs. Webster in her home, and second, to attend one of the meetings of the Cambray Women's Institute. The meeting of the Institute was held at Mrs. Webster's home, and a goodly number of members were present. The members of Cambray Women's Institute are to be congratulated on the manner in which they have succeeded in getting the young women to take an active part in the work of the organization. The officers for 1917-18 are all young ladies, which speaks well for the organization, which recognizes the wisdom of working in the younger members. The president, Miss Jean Manning, conducted the meeting very capably and showed even more enthusiasm in carrying on their work successfully than some of the older members. Mrs. Webster's daughter, Bernice, is secretary, treasurer, and is also doing splendid work.

As household editor of Farm and Dairy, I had been requested to address the Cambray Institute on this occasion. In my remarks, I endeavored to point out three essentials which count for success, not only in our Institute work, but in the life of each individual; namely, appreciation, enthusiasm and perseverance. Three books by the American author, David

Grayson, were recommended as being well worth reading, the titles being, "Adventure in Contentment," "Adventures in Friendship," and "The Friendly Road." David Grayson was a workman city man. During a long illness, from some dim corner of his boyhood came drifting the smog of a freshly-plowed furrows and the sound of a certain brook. He decided to leave the city where he was accumulating wealth and go back to the farm. In his boyhood he tells how he fell in love with nature, with his farm, the birds, his neighbors, passers-by, and, above all, learned to appreciate the worth while things in life. David Grayson essentially teaches that it is appreciation and contentment that counts, and not mere accumulation of wealth.

It is not what we pile up in this world that makes for success, but it is the learning to appreciate the things we have. So often we have a mistaken viewpoint, and if we keep the object ever before us of working as hard as we can in order to accumulate a little more riches, we soon simply exist instead of live. It is far better to take time to appreciate the opportunities as they come, to enjoy life and help others to do the same. As women, we often fail to appreciate the home life. And yet the highest calling of the wife and mother is in the home. In our Institute, also, if we fail to appreciate the good work that is being done by our members and the talents which are being lost, we are losing much.

Enthusiasm also has an important place. In the home where enthusiasm is prevalent, the humdrum tasks fairly fly at times under its spur. And in our Institute, too, how necessary it is to have an inexhaustible store of enthusiasm. How the atmosphere of a meeting will change when a woman enthusiastic is present. Enthusiasm is a splendid faculty to cultivate. We sometimes fail to realize in the home that a child's anxiety to do something which is oftentimes an expression of enthusiasm, and we should do what we can to encourage this faculty.

Perseverance is another mighty factor for success. It is this quality to persevere, to keep everlastingly at it, which has caused men and women who have achieved great things, to forge rapidly to the front ranks. Lack of perseverance among the officers of an organization is sometimes the cause of its failure. Programmes prove disappointing, or members do not attend in as large numbers as they might. To officers this is discouraging. But people will respect us the more, and we will respect ourselves the more, if, instead of giving up, we go at the work again and again, renewed energy. Another way in which we may persevere

in our Institutes is to get the young girls interested in the things being done in Cambray Institute. Nothing holds the interest and brings out latent talents so well as a certain amount of responsibility. A good motto, therefore, is "Something to do, and everyone at it."

Appreciation, enthusiasm and perseverance are indeed essentials which count for success in our lives, in our home life, and in our Institute work. First we must appreciate the things when we appreciate fully, we are prepared to go at it enthusiastically.

Having reached this stage, we can bring it to a satisfactory conclusion, only by perseverance.

In concluding, an instance was given of a young man who at one time was connected with a young people's organization. He was bright and had a keen appreciation of an idea. If a scheme appealed to him, his enthusiasm would soar to great heights and he would talk of the plan for hours. His enthusiastic ideas were seldom put into execution, as he lacked the quality of working out details in order to ensure success. He evidently had two essentials, but not the third.

We hear much from the men folk nowadays about balanced rations. Let us see to it that we have a balanced ration—let us appreciate, let us enthuse, and, above all, let us persevere.

Children's Health Code

SUNSHINE—Sun yourselves, your clothes and your rooms; it will stop the growth of the germs of sickness.

MILK—This is the best food for growing children. Drink at least three cupsful a day.

Clothing—Dress lightly; keep warm by exercise, play, and deep breathing and not by many clothes.

Dirt and Dust—These are the cars and rails that carry disease. Avoid them, if you would keep well.

Sleep—Sleep with all windows open, top and bottom. Go to bed early. Get at least nine hours' sleep.

Bathing—Bathe at least twice a week; better once a day.

Air—Air—open air every minute that you can. No inside air is ever as healthful as that of the outdoors. Play—Play every day, winter as well as summer, and always outdoors, if you can.

Food—Wash your hands always before eating. Eat slowly and chew your food thoroughly.

Alcohol and Tobacco—These cause lack of success and stiffness of nerves and stop your growth.

Water—Drink at least four cupsful every day.

Mouth, Nose and Teeth—Keep these parts clean, as they are the doorways for disease germs. Brush your teeth night and morning.

—Public Health, Michigan.

The garden must be kept free from weeds if the vegetables are to do their



Enjoying a Social Hour.

The illustration which appears herewith was snapped by our Household Editor on the farm of Mr. Frank Webster, Victoria County, Ont., just before refreshments were announced after the meeting of Cambray Women's Institute.

best. In removing the weeds use care not to hurt the roots of the vegetables as they come quite near the surface. One will commonly think of the fleshy part of the beets and carrots as the root. It is only a part of it. The roots that feed the plant are slender and threadlike and extend out from the fleshy root. These feeding roots come quite near the surface.

Next to its unique flavor the great economy of Salada Tea has been the reason for its enormous sale.—(Adv.)

the creek, and was not good remember.

"Till show well my love no tellable. I'm in Droug, strai'd through and on to bel hear the bla such, to turn up in business. Here comes

The storm- at that moment leaped forward, slid, and fell up again the each other, s blinded them thunder that stand, flitting roar, the sharp lo-shout was

An hour la drenched with the cooked tra The cool air west and a fall fine gave prom sunset.

is Darcy y tra I which Jo ed, the place Leish Shirley memories, he and stared in

Lying in the ward the deep Creek lay the with unseeing ing sky. While the road lay Jacobs, rain-bush, it as in his death-t

As Chamber him, the smile the swiftness severity of rested as visibl entrance lie

Grass River ments had ne treasury so suc- tion of John Ja

"unknown" m gone to Kansas the event and his face again. Did not know Darley Champe believed not talking, so the Thomas Smith to the dust of River craver.

The corner locate the blan unmarried and w and the strait in in his revolver hind, and as by not untang affair after a thrashing, when place of apulch

CHA

Jane a

Impulsive, en

And make h

fact, when

Keeping with

The secret o

O heart sore

best

That Thurst

—rest.

Harry Cham

office absorbed

morning was

front door he

drilled in. Th

Winning the Wilderness

(Continued from page 12.)

the creek, and the face of the man was not good to look upon nor to remember.

"I'll show Darley Chambers how well my left hand works. There'll be no telltale scar left on his face when I'm through, and he can tumble right in a strait to down to the water from here and on to hell, and Wyker's joint may bear the blame. Damned old Dutchman, to turn me out now, when I'm up in business when I had money. Here comes Chambers now."

The storm-cloud burst upon the hill at that moment. John Jacobs' arms leaped forward on the scarp slope, and fell to his knees. As it sprang up again the two men could not see each other, for a flash of lightning blinded them and in the crash of thunder that burst at the same instant, filling the valley with deafening roar, the sharp report of a double pistol-shot was swallowed up.

An hour later Darley Chambers, drenched with rain, stumbled down the crooked trail in the semi-darkness. The cool air came fanning out of the west and a faint rift along the horizon line gave promise of a glorious April sunset.

As Darley reached the twist in the trail which John Jacobs always dreaded, the place Thaine Aydelot and Leigh Shirley had invested with sweet memories, he suddenly drew his reins and stared in horror.

Lying in the rift with his head toward the deep waters of Little Wolf Creek lay Thomas Smith, scowling with unseeing eyes at the fast clearing sky. While on the farther side of the road lay the still form of John Jacobs, rain-beaten and smeared with mud, as if he had struggled backward in his death-throes.

As Chambers bent tenderly over him, the smile on his lips took away the awfulness of the sight, and the serenity of the mid-wintered face rested as visible token of an abundant entrance into eternal peace.

Grass River and Big Wolf settlements had never before known a tragedy so appalling as the assassination of John Jacobs at the hands of an "unknown" man. Hans Wyker had gone to Kansas City on the day before the event and Wykerton never saw his face again. Koolie Glimpke, who did not know the stranger's name, and Darley Chambers, who thought he did, believed nothing could be gained by talking, so they held their peace. And Thomas Smith went "unknown" back to the dust of the prairie in the Grass River graveyard.

The coroner tried faithfully to locate the blame. But as Jacobs was unarmed and was shot from the front, and the stranger had only one bullet in his revolver and was shot from behind, and as nobody lost nor gained by not untangling the mystery, the affair after a nine days' complete thrashing, went into local history, the place of apocrypha.

CHAPTER XXI.

Jane Aydelot's Will.

Impulsive, earnest, prompt to act, And make her generous thoughts a fact.

Keeping with many a light disquiet The secret of self-sacrifice, O heart sore-tried! thou hast the best.

That Heaven itself could give thee rest.

—Snow Bound.

Darley Chambers sat in his little office absorbed in business. The day morning was ideal. Through the front door the sounds of the street drifted in. Through the rear door the

room backward, which was Chambers' one domestic pleasure, sent in a volley of white like all the rales Chambers should have preferred bolly-hocks and red ponies, if he had cared for flowers at all. It was for the memory of the mother, whom he would not turn adrift to please a frivolous wife, that he grew the white blossoms she had loved. But as he never spoke of her, nor seemed to see any other flowers, nobody noticed the peculiarity.

"I wonder how I missed that mail!" he mused, as he turned a foreign envelope in his hands. "I reckon the sight of that poor devil, Smith, dropping into town so suddenly five days ago upset me so I forgot my mail and went to see the Shirleys. And the hot afternoon and Smith's coming in here, and Leigh leaned back in his chair and sighed."

"Poor Jacobs! Why should he be taken? Smith was gunning for me and mistook his man. Lord knows I wasn't fit for it."

He leaned his elbow heavily on the table, resting his head on his hand. "If Jacobs went on in my place, sacrificed for my sake, so help me God, I'll carry on his line, to the end of my lever business to the end of my days. There shan't no joint nor doggy never open a door on Big Wolf no more. I'll do a man's part for the world. I've been doing' for my own profit most of my life."

His brow cleared, and a de novo expression came to the bluff countenance. The humanness within him was doing his perfect work.

"But about the 'now.' He took up the letter again. "Carey says he ain't coming back. Him and young Aydelot dead sure to go to China soon. An' I'm to handle his business as per previous sections. This is the first of it. Somebody puttin' on mournin' style, I reckon."

Chambers took up a black-edged envelope, whose contents told him as Dr. Horace Carey's representative that Miss Jean Aydelot of Cloverdale was no longer living and much more as unnecessary to the business of the moment as a black-bordered envelope is unnecessary to the business of life. Then he opened a drawer in his small office safe and took out a bundle of letters.

"Here's a copy of her will. That's to go to Miss Shirley to read. An' you'll be reading it. What's the value of that, if you reckon? Also to be showed to Miss Leigh Shirley. An' here's—what!"

Darley Chambers opened the last envelope and tried to read. He stopped suddenly and gave a long surprised whistle.

Beautiful as the morning was, the man laid down the papers, carefully locked both doors and drew down the front blinds. He took up the envelope and read its contents. He read them a second time. Then he put down the neatly written papers and sat staring at nothing for a long time. He took them up at length for a third reading. "Everything comes out at last," he murmured. "Oh, Lord, I'm glad Doc Carey got hold of me when he did."

Slowly he ran his eyes down the lines as he read the half whisper: "I was walking down the National Pike road toward Cloverdale with little Leigh in the twilight. Where the railroad crosses Clover Creek on the high hill we saw Tank Shirley and the young cashier, Terrence Smalley, who had disappeared after the bank failure. It seems Tank had promised to pay Smalley to stay away and not let him see the bank. I had not kept him. Evidently Tank had not kept his word, for they were quarrel-

ing and came to blows until the cashier's face was cut and bleeding above the eye. There was a struggle, and one pushed the other over the bank into the deep water there. Little Leigh was, he knew one of the men was her father, and we thought he had pushed Smalley into the creek. He had a sort of panic and I could not swim. I tried to make her forget all about it. I promised her my home and farm some day if she would never tell what she had seen. She shut her lips, but if she forgot, I cannot tell.

That night I went alone to the fill and found Terrence Smalley with a cut face and a twisted shoulder lying above the place where Tank went down. I helped him to my home and dressed his wounds. I may have done wrong not to deliver him to the authorities, but he had a bad story to tell of Tank's bank record that would have disgraced the Shirley family in Ohio, so we made an agreement. He would never make himself known to Leigh, nor in any way disturb her life nor reveal anything of her father's life to disgrace her name, if I let him go. And I agreed not to report what I had seen, nor to tell what I knew to his hurt. He promised me also never to show his face in Cloverdale and to discontinue his law suit against me, who used Tank Shirley's hatred of his brother and his other sins to hide his own wrongdoing. But I tried to do my duty by the innocent ones who must suffer, which I turned him loose with his conscience. I do not know what has become of him, but, so far as I do know, he has kept the secret of Tank Shirley's crooked dealing with the Cloverdale bank, and has never annoyed Leigh nor brought any disgrace to her name. This statement duly witnessed, etc.

Slowly Darley Chambers read. Then, laying down the pages, he said as aloud: "Tank's in the Grass River graveyard. Unknown to Jim Shirley and Asher Aydelot, whose eyes he'd never let see him. I understand now, why. Known to me as Thomas Smith, an escaped defaulter's bank cashier who didn't commit suicide. Known to the late Miss Aydelot as Tank Shirley's murderer. If the devil knows where to get on the track of that scoundrel an' locate him properly in hell, he'll do it without my help. By the Lord Almighty, I'll never tell what I know. An' this paper goes to ashes here. Oh, Caesar! If I could only burn up the recollection of what I ever saw down an' money-grubbin' enough to collate with such as I had for business. I'm danged glad I had that quarter kep' in Leigh's name 'stead of Jim's. That's why Thomas Smith threatened and did me. He didn't dare to go against Leigh as long as Jane Aydelot was livin'."

He stuck a blazing match to the letter and watched it crumple to ashes on the rusty stove-hearth. Then he carefully swept the ashes on a newspaper, and, opening his doors again, he scattered them in the dusty main street of Wykerton.

That afternoon Chambers went again to the Cloverdale Branch. Leigh was alone, busy with her brushes and paint-ard in the seat on the lawn where Thaine Aydelot had found her on the summer day painting sundowners. The first little sunflower was blooming now by the meadow fence.

"Don't get up, Miss Shirley. Keep your seat, mom. I dropped in on a little business. I'm glad to set out here."

Chambers took off his hat and scanned his red face as he sat on the ground and looked out at the winding river bordered by alfalfa fields.

(To be Continued.)



Far more effective than Sticky Fly Catchers. Clean to handle. Sold by Druggists and Grocers everywhere.

CORRUGATED
WRITE FOR PRICES
METALLIC ROOFING CO.
LIMITED
TORONTO, CANADA.

LUMP JAW
For twenty years the only saw cut
has been Fleming & Lumsden Saw
Co. Use it no matter how low
the price. It is the only saw
that will cut through
any kind of iron.
FLEMING & LUMSDEN
83 CHURCH ST., TORONTO, ONT.

Peck, Kerr & McElderry
Barristers, Solicitors, etc.
415 Water St., Peterborough
E. A. Peck F. D. Kerr V. J. McElderry

SHIP YOUR BUTTER & EGGS
—to us. We are not commission merchants. We pay net prices and remit promptly.
THE WILLIAM DAVIES COMPANY
LIMITED
Established 1854. TORONTO, ONT.

FOR SALE—The undersigned offers for sale 100-acre farm, being half lots 6, Con. 5, Maryberg Twp., Wellington Co. Soil rich clay loam under best cultivation for over 25 years. Has nearly 2 miles drainage. Fences both laid and wire, nearly all in excellent repair. Large cement-bath house with hard floor, summer kitchen, good cellars, furnace and all modern conveniences. Barn 72 x 66, good stabling, cement floor, slings, hay-pens, granary, iron shed. Two attached new, Windmill pumps water to house, barn, etc. Buildings all rodded. Good orchard, fall and winter elm, beech, basswood and birch, down. Village 1 1/2 miles; school just opposite farm. Rural and telephone. Splendid home. Apply A. M. Moorehead, R. R. No. 2, Moorefield, Ont.

WHITE AND COLUMBIA WYANDOTTES, LIGHT BRAMMAS, & C. WILLIAM LEIGHMOND,
Michael K. Boyer, Box 23, Hammonds, N.J.

FOR IMMEDIATE SALE
48 acres of choice farm land in high state of cultivation. 1 1/2 miles east from Toronto and 3 miles from street. Buildings in good repair. Will sell with or without stock and crop. Apply to
DR. N. E. McEwen,
Box 253, McDonnell College,
St. Anne-de-Bellevue, Quebec.

Ontario Veterinary College

Under the Control of the Department of Agriculture of Ontario
Established 1862.

Affiliated with the University of Toronto

College will reopen on Monday, the 1st of October, 1917
110 University Avenue. Toronto, Canada.

CALENDAR ON APPLICATION.

E. A. A. GRANGE, V.S., M.S., Principal

The Peerless Perfection Fence

Divide your stock and they stay where you put them. The fence lasts for 20 to 30 years. Can't tear, can't burn, can't break down. Stands any weather. Each joint securely held with the Peerless Perfection Fence. All parts fully guaranteed. The strongest, most serviceable farm fence made and fully guaranteed.

SEND FOR CATALOG

Shows the many uses, how to install, and the many advantages of this fence. The Peerless Perfection Fence is made by the

THE BARNWELL-HOXIE WIRE FENCE COMPANY, Ltd.
Windsor, Manitoba Hamilton, Ontario

What Do You Know About Tractors?

Anyone who has been keeping abreast of the times must feel and know that there is a great future ahead of the Gas Tractor. Get a knowledge now of the design, construction and repair of farm tractors. Get



The Modern Gas Tractor

By Victor W. Page, M. E.

480 Pages Handsome Cloth Binding
Three Folding Plates
204 Illustrations
PRICE \$2.00

A complete treatise describing all types and sizes of gasoline, kerosene and oil tractors. This work is written by a recognized authority on self-propelled vehicles, and internal combustion motors. Everything is explained so simply that anyone of average intelligence may obtain a comprehensive knowledge of gas tractor operation, maintenance and repair. Everything is fully explained. Nothing is left for you to guess at. Describes fully tractors for small farms and orchards, as well as type of the largest capacity. All illustrations are plainly marked with all important parts indicated so they may be easily identified. Drawings are simple, and every illustration has been specially made for the book.

Book Department

FARM & DAIRY

PETERBORO, ONT.

Farm and Dairy Ordered to the Front in France

Crowborough Camp,
Sussex, Eng., 21/1/17.

Farm and Dairy,
Peterboro, Ont., Can.

Dear Sirs:

I am writing to notify you of a change of my address. I do not know whether you send your paper to France or not, but, if possible, I would like to get it so as to keep in touch with things along the line of dairying and other things.

My old address is: Sapper H. C. Wilson, No. 74641, Div. Sig. Co., Crowborough Camp, Sussex, Eng.

My new address will be:
SPR. H. C. WILSON, 74661,
Canadian Signal Co.,
R.E. Advanced Base,
B. E. F., France.

The Public

An International Journal
of
Fundamental Democracy.

A clever man said that when people speak of "habits" they refer to bad habits only. As a matter of fact habits are both good and bad. Personal progress is largely a matter of good habits. Reading "The Public" is a habit which thousands of alert minds prize. Why not cultivate this invigorating habit yourself?
Referees: Lincoln Steffens, Brand Whitlock, Judge Ben B. Lindsey, Ray Stannard Baker, and you—after you have tried it.
Introductory Offer: Three booklets on "The Public" only 5c. The Public
122 East 87th Street N. Y. City

The Makers' Corner

Butter and Cheese Makers are invited to send contributions to this department, to discuss any questions or matters relating to cheese making, and to suggest subjects for discussion.

Mark Your Churnings

IN speaking of the lack of uniformity in butter marketed by dairies, butter merchants and inspectors often remark the fact that out of a number of shipments of butter from an individual dairy, no two may contain butter which is graded the same. This is more especially found to be the case with creameries in which the individual churnings are not marked. Those creameries that have adopted the system of marketing their tubs with the churning number have found that it has been a great aid in securing uniformity in the finished product.

The great advantage in marketing the churnings is the assistance that it lends to butter-makers in the improvement of the quality and uniformity of his product. By keeping a record of methods, conditions and temperatures of each churning, a report from the market on each churning will show the butter-maker the proper methods to use if the best results are to be obtained. This enables him to work out a system for his particular locality which, if applied daily, will turn out a uniformly good product.

Another great advantage in marking the churnings is that representative samples may be obtained during an official inspection or when selling the butter. In cases in which churnings are not marked, very often, out of a lot of 50 tubs of butter, one churning of five tubs may have been mottled in color, and such tubs might all be examined as a sample of the 50 tubs in the lot. This would give a very bad impression of the butter on hand. With churnings which have been marked, however, one tub may be examined from each lot.

There are several methods in use for marking churnings; (1) date of churning, (2) consecutive numbers, (3) number of day in year and number of churning for that day, (4) date and number of tubs in churning, (5) numbered consecutively, with number of tubs in churning.

Whatever method is used is immaterial, but the marking should be done on the side of each tub and put on with a rubber stamp. Marking with a lead pencil on the cover is not satisfactory, as it is too easily erased or made illegible by handling and the packing of one tub on top of the other in shipping.

Keep an Eye on Milkstands

FOR some weeks last season I was greatly troubled with gassy fermentations in my cheese. Gas developed to such an extent as to seriously affect the flavor of the finished product and added greatly to the work of manufacturing the cheese. I endeavored by using a good starter and careful handling to overcome this, but the trouble kept up so continuously that I decided to find out and remedy the cause, rather than endeavor to cure the end of the matter.

It was not difficult to detect from whose cans the gassy milk was coming. When I had made myself sure by noting for a few days the odor of the milk supplied by two of our patrons, I decided to call on these and see what might be done to remedy matters. In each case the fault was in an improperly located milkstand.

The first man called upon had his

milk stand built against the west side of his granary. It was unshaded all afternoon and with the cans thus hot when the uncool evening's milk was poured in conditions were favorable for the development of both harmful bacteria and odors. The pigs were placed in a field adjoining the granary and were allowed to come underneath this building for shade. Besides the dust from such filthy quarters which must inoculate the milk with gassy fermentations, the milk also took up a goodly share of the odors from the piggery before coming to the factory. This patron was loath to believe that there was anything wrong with the location of his stand. After he had compared, however, the odor of his milk with that of other patrons, he readily agreed to remove his stand and the trouble with his milk was at an end.

The trouble with the other patron was also due to animals. While his stand was built in a nice, airy location and was shaded by a tree, it was placed too near the roadway. Besides this, it had the same fault as the other in that the pigs were penned in the field in which this stand was located. These animals were in the habit of spending the hot part of the day underneath the milk stand. Whether the trouble came from the road dust which blew into the cans, or from having the pigs in such close proximity, certain it is that after the pigs had been removed to another field and the can properly protected from dust, the milk sent in by this patron was also up to the standard.

After the two patrons had been visited, no further trouble was found with gassy fermentations in the cheese. Thus it may be seen that one or two patrons sending in gassy milk, may be the means of having an entire batch of cheese cut in price because of inferior quality. It is not only the cheese-maker who suffers, but the patron who send in good milk who suffer when some patron is careless in the location of his milkstand.—A Cheese-maker, Pontiac Co., Que.

Cold Storage Architecture

TO meet an ever-increasing demand for information respecting the construction of icehouses and small cold storage systems for farmers, country storekeepers, milk producers, hotel-keepers, owners of country homes and others, the Dominion Department of Agriculture has prepared Bulletin No. 49, of the Dairy and Cold Storage Branch, entitled "Small Cold Storages and Dairy Buildings," the immediate sponsor of which are Mr. J. A. Ruddick, Dairy and Cold Storage Commissioner, and Mr. Joseph Burgess, Cold Storage Inspector.

The bulletin is a complete handbook on cold storage construction of a comparatively simple and inexpensive kind. Besides minute explanatory details of plans and material required for construction of ice houses and refrigerators, a series of drawings, prepared by the Technical Branch of the Department of Public Works is presented, of which blue prints on a scale of one inch to two feet can be had free on application to the Dairy and Cold Storage Commissioner, while the bulletin itself can be had also free by writing to the Publication Branch, Department of Agriculture, Ottawa. If the information herein contained were extensively made use of, not only would much waste be avoided and financial profit secured, but considerable benefit would be derived in health and the enjoyment of life enhanced. Five different plans are given in detail, each with complete specifications for each and a statement of quantities of ice that can be stored.

The
(Cont
ship ribbon
Swift, with
ollege carry
the champi
claimed bot
Thompson
both these
Miller, Ste
Hampshire
By Hoover
A. McIlw
cured the
chires.

In the dai
petition wa
the standar
to learn o
of breeding
led into th

In the Jer
ship was pl
tucky Wond
per & Sons,
& Sons also
Jersey priz
bull, senior
& the herc
Swiss, the g
to "Archib
of J. Joyce
champion fe
barbs," by
D.

Among the
wers as fol
over, W. Br
Rowland Ne
Morston, Fair
1 and 2, Ro
year: Manito
2, W. Braid;
Dull, senior
Ness; 3, Ma
Thogus. This
after Jan. 1st,
2 and 4, R. N
tural College
over: 1 and 2
4, W. Braid;
1, Manitoba
and 4, R. Nes
son.

Heffer, two
Ness, Dr. W
River, Heffer
4, R. Ness; 2
College; 3, W
yearling, calv
1916; 1 and 2
4, W. J. Mort
1, 2, and 3 Ma
1916; 3 and 4
Junior, calved
1916; 1, 2 and 3
Bull. Herd
all under 2
ritual Coll
W. Braid;
males, any ag
R. Ness; 4, V
animals, any
one bull: 1
Braid.

The Holstei
cent among
the seat quite
herds in the
as follows: 1
1, J. H. Layco
0, G. Bevington
years; 1, Clark
son; 3, J. H.
year; 1, Man
lege, Winnipe
3, Clark and S
1, J. H. Layco
1, J. H. Layco
Bull calf, juni
1, 2, J. H. Layc
0, G. Bevington
over: 1, Clark
Agricultural C
4, H. Layco
1, J. H. Layco
Clark and Sims
and 4, G. Bevi
Sims; 5 and 5
senior yearling
and 4, Manitob

The Brandon Fair, etc.

(Continued from Page 2.)
 ship ribbon for males went to S. Swift, with the Manitoba Agricultural college carrying off the red ribbon for the champion sow. William Gilbert claimed both championships in the Tamworths. In the Duroc Jerseys, both these honors went to O. G. O. C. Miller, Strathmore, Alta., while in the Hampshires, similar honors were won by Hoover & Sons, of Bittern Lake. A. McDown, of Brandon, Ont., secured the champion reserve on Hampshires.

Dairy Cattle.

In the dairy cattle classes the competition was particularly keen and the standard high. The West has little to learn from the East in a matter of breeding, as indicated by the herds led into the ring.

In the Jerseys, the grand championship was placed upon the "Pet's Kentucky Wonder," exhibited by J. Harper & Sons, Westlock, Alta. Harper & Sons also carried off the bulk of the Jersey prizes, including the yearling bull, senior calf, all the female prizes and the herd prize. In the Brown Swiss, the grand championship went to "Archibie of Trebartha," owned by A. J.oyal, Hazenmore, Sask. The grand champion female was "Beulah of Trebartha," by the same exhibitor.

Among the Ayrshires, the awards were as follows: Bull, three years and over, W. Braid, Oak River; 2 and 4, Rowland Ness, De Winton; 3, W. J. Morston, Fairlight. Bull, two years: 1 and 2, Rowland Ness. Bull, one year: Manitoba Agricultural College; 2, W. Braid; 3 and 4, Rowland Ness. Bull, senior: 1, 2 and 4, Rowland Ness; 3, Manitoba Agricultural College. Bull calf, junior, calved on or after Jan. 1st, 1917: 1, W. J. Morston; 2 and 4, R. Ness; 3, Manitoba Agricultural College. Cow, three years and over: 1 and 2, W. Braid; 2, R. Ness; 4, W. J. Morston. Cow, three years: 1, Manitoba Agricultural College; 2 and 4, R. Ness; 3 and 5, W. J. Morston.

Ayrshires.

Heifer, two years: 1, 3 and 4, R. Ness, De Winton; 2, W. Braid, Oak River. Heifer, senior yearling: 1 and 4, R. Ness; 2, Manitoba Agricultural College; 3, W. Braid. Heifer, junior yearling, calved on or after Jan. 1st, 1916: 1 and 3, R. Ness; 2, W. Braid; 4, W. J. Morston. Heifer calf, senior: 1, 2, and 5, Manitoba Agricultural College; 3 and 4, R. Ness. Heifer calf, junior, calved on or after Jan. 1st, 1916: 1 and 2, R. Ness; 3, R. W. Braid. Heir, bull and three females, all under two years: 1, Manitoba Agricultural College; 2 and 4, R. Ness; 3, W. Braid. Heir, bull and three females, any age: 1, W. Braid; 2 and 3, R. Ness; 4, W. J. Morston. Three animals, any age or sex, the get of one bull: 1 and 2, R. Ness; 3, W. Braid.

The Holstein exhibits were the largest among the dairy cattle and represented quite a number of the best herds in the West. The awards were as follows: Bull, three years and over: 1, J. H. Laycock, Okotoks, Alta.; 2 and 3, G. Bevington, Winterburn. Bull, two years: 1, Clark and Sims; 2, Bevington; 3, J. H. Laycock. Bull, one year: 1, Manitoba Agricultural College, Winnipeg; 2 and 4, G. Bevington; 3, Clark and Sims. Bull calf, senior: 1, J. H. Laycock; 2, Clark and Sims; 3, J. H. Laycock; 4, G. Bevington. Bull calf, junior: 1, Clark and Sims; 2, J. H. Laycock; 3, J. H. Laycock; 4, G. Bevington. Cow, four years and over: 1, Clark and Sims; 2, Manitoba Agricultural College; 3, G. Bevington; 4, J. H. Laycock. Cow, three years: 1, J. H. Laycock; 2, G. Bevington; 3, Clark and Sims. Heifer, two years: 1 and 4, G. Bevington; 2, Clark and Sims; 3 and 5, J. H. Laycock. Heifer, senior yearling: 1, J. H. Laycock; 2 and 4, Manitoba Agricultural College;

3, G. Bevington. Heifer, junior yearling, calved on or after Jan. 1st, 1916: 1, Clark and Sims; 2 and 4, G. Bevington; 3, J. H. Laycock. Heifer calf, gyle: 1 and 2, Clark and Sims, Argye, Man.; 3, G. Bevington; 4 and 5, J. H. Laycock. Heifer calf, junior: 1, Clark and Sims; 2, G. Bevington; 3, Manitoba Agricultural Farm; 4, J. H. Laycock. Heir, bull and four females, any age: 1, J. H. Laycock; 2 and 3, Clark and Sims; 4, G. Bevington.

"Misleading Official Data"

EDITOR, Farm and Dairy.—A good many farmers will have read with interest Mr. Marsh's letter on misleading official data. It has always seemed to me that the weak point in all farming operations has been this question of costs, and this is the one point more than all others that the Government Experimental Farms and various Provincial Departments of Agriculture should take up. Most farmers know how to grow various kinds of crops and how to handle cattle and other live stock to the best advantage. They have received excellent instruction on these lines for many years back from various government authorities. We all know that we could produce bigger crops and better crop if we did certain things which we do not do, because we have not got the means and cannot get the labor to do them. Most of the Government Experimental Farms, in making their various experiments as regards costs of producing different things, go on the assumption that most things produced on the farms are by-products and more or less waste products and that if you can only find some way of using this product so that it brings in dollar or two then you are that much ahead.

All this is very true, but it does not touch the heart of the subject at all. What ordinary farmer can expect to get who was managing a manufacturing business with \$20,000 or \$40,000 cash capital invested in it? This would probably mean a total capital, including bank accommodations of \$40,000—possibly more. I venture to say that in any other line of business than farming you could not hope to get a competent and reliable man to manage a business of that size for a salary of less than \$200 a month, and the people putting their money into this investment would expect a return of from eight to 10 per cent. at least, so far as the cash capital is concerned. In this province, British Columbia, the bank would expect seven or eight per cent for any accommodation which it gave. Put on this basis, how many farms are paying—certainly none in the lower Fraser Valley. The constantly recurring labor trouble on the farms, the trouble we always have with us, is largely the result of the small wages which we have been able to pay in the past and the point of view from which farm labor is looked upon as unskilled labor. As a matter of fact, efficient farm labor is one of the most highly skilled occupations there is, as it has to be skilled in so many different lines. Such labor is certainly ought to get more than the ordinary unskilled labor—the railway laborer, the section hand, the day laborer in the cities, the swamper in the logging camps, the mucker in the mines—but every farmer knows he cannot afford to pay the figures these men get; consequently he has to put up with any kind of inefficient labor he can get.

The various Provincial Agricultural Departments, Agricultural Colleges and experimental farms ought to get together and go into this question in a thoroughly businesslike manner and instruction of the other branches of interest take a rest.—Chas. E. Hope, New Westminster Dist., B.C.



Canada needs what You can Save!

"What we have got to do is not only to produce, but to save!"

Sir George Foster,
 Minister of Trade and Commerce.

THE part which Canada is proud to play in the Empire's war is costing more than we ever dreamed we could raise. If we are to make good financially, all must help!

If every man, woman, and child in Canada would save 15c. a day, and invest it in War Savings Certificates, we could carry the cost of the War.

War Savings Certificates make it easy for everyone to become Canada's partner—bearing a share of the burden—earning, and receiving, a share of the reward.

For every \$21.50 you lend the nation now, you will receive \$25 at the end of three years—an interest return of over 5%. Certificates are issued in denominations of \$25, \$50 and \$100, selling at \$21.50, \$43 and \$86 respectively, at any Bank or Money Order Post Office.



THE NATIONAL SERVICE BOARD OF CANADA,
 OTTAWA.

MANY DAUGHTERS OF THE FARM
 ARE NUMBERED AMONGST OUR STUDENTS EACH YEAR
 Academic courses from Preparatory Work to Junior University, Teachers' Certificates and first Year Law, Music, Art, Geography, Domestic Science, Social Economics and Civics, Commercial Work, Physical Training—Gymnasium, swimming.
ONTARIO LADIES' COLLEGE.
 Caledonia from Rev. L. F. Fawcett, B.A., Wmby.

BUILD A STURDY SLAVE SILO

Cost Less and 100% More Durable

Our Preservative Process is an Exclusive Feature.

A 50-page Fully Illustrated Descriptive Catalogue free on request.

Territory still open to live Agents.

THE ADIRONDACK SILO CO.
 OF CANADA, LIMITED
 425 Atwater Avenue - Montreal, P. Q.

THE LATEST AND BEST AUTOMOBILE BOOKS

ALL 1917 EDITIONS

STARTING, LIGHTING AND IGNITION SYSTEMS

By Victor W. Page



A practical treatise on modern practice on starting, lighting and ignition systems. Includes a complete exposition of storage battery construction, and repair. Explains all types of starters—generators—magneto and all ignition or lighting system units. Considers the systems of cars already in use as well as those that are to come in 1917. A book every one needs. Nothing has been omitted, no details have been slighted. A book you cannot afford to be without.

Nearly 500 pages, 297 Specialty Made Engravings, 1917 Edition. Price \$1.50.

THE MODERN GASOLINE AUTOMOBILE

By Victor W. Page

The most complete treatise on the gasoline automobile ever issued. Written in simple language by a recognized authority familiar with every branch of the automobile industry. Free from technical terms. Everything is explained so simply that anyone of ordinary intelligence may gain a comprehensive knowledge of the gasoline automobile. The information is up to date and includes, in addition to an exposition of principles of construction and description of all types of automobiles and their components, valuable money-saving hints on the care and operation of motor cars propelled by internal combustion engines. The book tells you just what to do, how and when to do it. Nothing has been omitted, no detail has been slighted.

850 Pages, 650 Illustrations, 12 Folding Plates, 1917 Edition. Price \$2.50.

AUTOMOBILE REPAIRING MADE EASY

By Victor W. Page, M.E.

A thoroughly practical book containing complete directions for making repairs to all parts of the motor car mechanism. Written in a thorough but non-technical manner. Will be found of special value to gardeners and amateur automobile mechanics; it also contains a mass of general information that will be of equal value to the motorist who takes care of his own car.

This book contains special instructions on electric starting, lighting and ignition systems. Tire repairing and rebuilding. Antirust, welding, brazing and soldering. Heat treatment of steel. Latest timing procedure to greater mechanical efficiency for all repairs. You will never "get stuck" on a job if you own this book.

1000 Specialty Made Engravings on 500 Plates, 106 Pages (5 1/2 x 8), 11 Folding Plates, 1917 Edition. Price \$2.00.

THE MODEL T FORD CAR

By Victor W. Page

This is one of the most complete instruction books ever published. All parts of the Ford Model T Car are described and illustrated. Complete instructions for driving and repairing are given. Every detail is treated in a non-technical yet thorough manner.

This book is written especially for new drivers and owners, by a recognized automobile engineering authority and an expert on the Ford, who has driven and repaired Ford cars for a number of years. He writes for a average man in a practical way from actual knowledge. All parts of the Ford Model T Car are described and fully explained. 1917 Edition, 2 Large Folding Plates, 100 Illustrations, 300 Pages. Price \$1.25.

Any of these books sent prepaid on receipt of price, or a special circular of all our Automobile Books and Charts sent on request.

AUTOMOBILE QUESTIONS AND ANSWERS

By Victor W. Page

This practical treatise consists of a series of thirty-seven lessons, covering with over 2,000 questions and their answers the automobile, its construction, operation and repair. The subject matter is absolutely correct and explained in simple language. If you can't answer all of the following questions you need this work. The answers to these and 2000 more are to be found in its pages.

Give the names of all important parts of an automobile and describe their functions. Describe action of latest types of keroseene carburetors. What is the difference between a "double" ignition system and a "dual" ignition system? Name parts of an induction coil. How are valves timed? What is an electric motor starter and how does it work? What are advantages of worm drive gearing? Name all important types of ball and roller bearings, etc., etc. 650 Pages, 350 Illustrations and Plates, 1917 Edition. Price \$1.50

AUTOMOBILE QUESTIONS AND ANSWERS



THE AUTOMOBILIST'S POCKET COMPANION AND EXPENSE RECORD

Arranged by Victor W. Page, M.S.A.E.

This book is not only valuable as a convenient pocket record but contains much information of value to motorist. Includes a condensed digest of auto laws of all States, a lubrication schedule, hints for care of storage battery and cars, location of road troubles in all parts of the car, anti-freezing solutions, horse-power table, driving hints and many useful tables and recipes of interest to all motorists. Not a technical book in any sense of the word, just a collection of practical facts in simple language for the everyday motorist.

Will enable you to keep track of all your expenses. Convenient ruled pages eliminate all bookkeeping except entering a few figures daily. Shows the miles covered during each day of the year, the fuel used and cost of repairs. Tells if your tires are standing up to their guarantee, which make of tires gives best service, etc. Convenient pocket size, handsomely bound in limp leatherette cover. Price \$1.00



AUTOMOBILE WELDING WITH THE OXY-ACETYLENE FLAME

By M. Keith Dunham

THIS IS THE ONLY COMPLETE BOOK ON THE "WHY" AND "HOW" OF WELDING WITH THE OXY-ACETYLENE FLAME the various parts of the automobile.

Explains the apparatus to be used, its care, and how to construct necessary shop equipment. The actual welding of all automobiles parts is treated in a manner understandable by everyone.

Automobile owners, garage and service stations, blacksmith and machine shops, as well as industries using the oxy-acetylene flame will find this book of the utmost value, since the perplexing problems arising when metal is heated to a melting point are fully explained and the proper means to overcome them shown.

192 Pages. Fully Illustrated, 1917 Edition. Price \$1.00.

AUTOMOBILE CHARTS, 25 CTS. EACH

Location of Carburetion Troubles Made Easy.
Location of Ignition System Troubles Made Easy.
Location of Cooling and Lubrication System Faults.
Location of Ford Engine Troubles Made Easy.
Location of Gasoline Engine Troubles Made Easy.
Lubrication of the Motor Car Chassis.

REPORT OF AVYSHIRE COWS AND HEIFERS QUALIFIED IN THE RECORD PERFORMANCE TEST

From May 31 to June 21, 1917.

Mature Class.

HOLEHOUSE FLEET, of Trout Run, 2703, 14,832 lbs. milk, 623 lbs. fat, 4.28 per cent. fat. L. Stansell, Stratfordville, Ont.

Jeannette, 1334, 11,150 lbs. milk, 575 lbs. fat, 4.06 per cent. fat. Arthur Legare, Sene Brunt, Que.

Irene of Edenbank, 35689, 10,726 lbs. milk, 488 lbs. fat, 4.54 per cent. fat. W. B. Walker, Chilliade, B. C.

Ruth of the Willows, 2401, 9,030 lbs. milk, 376 lbs. fat, 4.16 per cent. fat. Gilbert McMillan, Hurontario, Que.

Woodland Queen, 35640, 8,909 lbs. milk, 350 lbs. fat, 3.92 per cent. fat. Robert H. Little, Campbellford, Ont.

Minnie of Maple Leaf, 36062, 8,782 lbs. milk, 377 lbs. fat, 4.33 per cent. fat. Thomas Deeks, Willamshburg, Ont.

Orissa, 32579, 8,540 lbs. milk, 339 lbs. fat, 3.96 per cent. fat. University of Saskatchewan, Saskatoon.

Meatfower 4th, 25917, 9,979 lbs. milk, 390 lbs. fat, 3.81 per cent. fat. Campbell Brothers, Newiacke, N. B.

Belle of Hubert, 21817, 9,787 lbs. milk, 389 lbs. fat, 3.97 per cent. fat. S. D. Thorne, South M. York, Ont.

Selwood Pride, 34883, 8,100 lbs. milk, 383 lbs. fat, 4.20 per cent. fat. L. J. Stansell, Stratfordville, Ont.

Nancy, 23811, 8,600 lbs. milk, 348 lbs. fat, 4.02 per cent. fat. Walter M. Wallace, Warden, Que.

Four-year-old Class.

Hlosson, 42168, 8,676 lbs. milk, 372 lbs. fat, 4.3 per cent. fat. S. Thorne, South Mountain, Ont.

Theresa Lodge, 36332, 8,426 lbs. milk, 380 lbs. fat, 4.5 per cent. fat. Samuel Kitte, Chertsvill, Ont.

Queen, 35140, 8,331, 8,385 lbs. milk, 365 lbs. fat, 4.35 per cent. fat. Samuel Kitte, Chertsvill, Ont.

Three-year-old Class.

Primrose of Tangleywild 4rd, 41727, 10,200 lbs. milk, 430 lbs. fat, 3.94 per cent. fat. Woodless Brothers, Moorefield, Ont.

Brighten Bran Blossom, 4th, 44889, 11,140 lbs. milk, 392 lbs. fat, 3.60 per cent. fat. H. Mulholland, Orkney, Ont.

Tangleywild Peach 2nd, 42086, 8,445 lbs. milk, 398 lbs. fat, 4.68 per cent. fat. Woodside Brothers, Moorefield, Ont.

Springbrook Mary, 34774, 8,123 lbs. milk, 232 lbs. fat, 4.15 per cent. fat. St. Joseph's College, St. Joseph, N.S.

Valiant, 40439, 7,720 lbs. milk, 323 lbs. fat, 4.31 per cent. fat. J. E. Beauregard, St. Damme, Que.

Chapman Queen 8th, 48429, 6,624 lbs. milk, 348 lbs. fat, 4.74 per cent. fat. J. E. Beauregard, St. Damme, Que.

Chapman Queen 8th, 48429, 6,624 lbs. milk, 230 lbs. fat, 4.30 per cent. fat. J. & C. Bailantyne, Chertsvill, Ont.

Two-year-old Class.

Woody of Inglewood, 40487, 11,631 lbs. milk, 416 lbs. fat, 3.78 per cent. fat. Wilson McPherson & Sons, St. Ann's, Que.

Lassie 3rd, 40641, 9,022 lbs. milk, 414 lbs. fat, 4.33 per cent. fat. Joseph Thompson, Sardin, E. C.

Balmagan, 48123, 8,029 lbs. milk, 255 lbs. fat, 4.16 per cent. fat. James & C. C. Bailantyne, Chertsvill, Ont.

Lady Cinderella, 4846, 7,720 lbs. milk, 300 lbs. fat, 3.88 per cent. fat. Joseph Thomson, Sardin, E. C.

Sylvia of Glenora, 42135, 7,621 lbs. milk, 212 lbs. fat, 4.09 per cent. fat. St. R. Cairns, Woodstock, P. E. I.

Roebuck of Willawana, 42599, 7,574 lbs. milk, 291 lbs. fat, 3.83 per cent. fat. E. A. Turner, Carleton Place, Ont.

Flores, 46947, 7,647 lbs. milk, 290 lbs. fat, 4.2 per cent. fat. S. Thorne, South Mountain, Ont.

Pat of Gladden Hill, 41333, 7,506 lbs. milk, 274 lbs. fat, 3.67 per cent. fat. Laurie Brothers, Agincourt, Ont.

THE OTTAWA WINTER FAIR.

The Ottawa Winter Fair, in spite of the adverse conditions which it has had to face during the past two years, has made remarkable progress and last year was the most successful show since its inception in its history and one of great importance from a breeding and feeding standpoint to live stock men in Eastern Ontario and Quebec. The Winter Fair last year made a record for business and was approximately \$1,000. At the annual meeting held recently the following officers and committees were elected:

Hon. Presidents: Peter White, K.C., Toronto; Col. W. J. Cowan, Chertsvill, Ont.
Hon. Vice-Presidents: J. A. G. Stewart, Ottawa; Hon. General Director, H. M. Wade, Toronto; Secretary-Treasurer, W. D. Jackson, Carp.
Chairman of Finance, H. G. Tomlinson, J. W. Brant, Ottawa; Beef Cattle, J. H. Stratton, Ottawa; Sheep, C. B. Bell, Ottawa; Swine, J. C. Stuart, Osgoode Station; Dairy Cattle, E. S. Arrubald, Ottawa; Poultry, J. G. Colburn, Ottawa; Swine, S. T. Hayden, Ottawa; Reception, Wm. Smith, M. L. Colburn, Ottawa.
The 1918 show of the Ottawa Winter Fair will be held Jan. 15-16-17-18th, and another prospectus sent to local agents forward to—W. L. Jackson, Secretary.

RURAL PUBLISHING CO., Ltd. Peterboro, Ont.



One Million Acres of Wheat for Ontario Will Be Justified in 1918 by the Present Abnormal World Situation

THIS IS HOW WE STAND: In 1915 wheat exporting countries had a bumper crop, hence a huge carry-over was provided for 1916 of 329,000,000 bushels. This surplus saved the Allies for the 1916 crop was short—745,000,000 bushels less than 1915, 156,000,000 bushels less than 1914, and 82,000,000 bushels less than the five year average. As a result we have to-day practically no available exportable surplus. The world must live from hand to mouth—must depend on each crop to carry it until the next harvest.

This would be an extremely serious situation even if there were no war. The normal condition is a large surplus at the beginning of each harvest to make provision for crop failures which usually occur in some part of the world. The war, of course, aggravates the situation. Europe produces less wheat now and consumes more. North America, the present great source of supply, is being used to feed millions of men to the battle field, while labor has been diverted to new industry. Added to all this, the submarines take a constant toll of shipping and cargoes. That is the general situation.

Supply Unequal to Needs

Nor are the prospects bright this year. England, France and Italy require 650,000,000 bushels of imported wheat. India and Australia are too far away to render much assistance in view of submarines and shortage of shipping. The Argentine crop is a failure and no surplus is available there for export. The best of weather conditions will not, it seems now, permit of a greater exportable surplus from the North American 1917 wheat crop than 225,000,000 bushels, 125,000,000 from Canada and 100,000,000 from the United States. In all probability it will be less. Hence the supply of wheat in the world this year will not nearly equal the demand.

That is the outstanding factor. No trade agreements or organization can supply the wheat that does not exist. Nothing can restore the balance but heavy production. High prices must of necessity prevail until the balance is restored—and that can scarcely occur while the war lasts. Therefore the situation justifies the planting of all the winter wheat in western and central Ontario and all the spring wheat in the eastern and northern counties that can be handled without disturbing too greatly the general scheme of farming now practiced—for which stock and buildings have been provided.

A Crisis is Coming

The wheat situation is given in detail as an illustration of the food crisis we are approaching—for we have not reached it yet. The true crisis will occur in 1918 or 1919. Although wheat is the chief exportable food grain, all other staple crops must be considered in somewhat the same light. Wheat, beans, oats, dairy products and meat are required by our Allies. High prices for these must increase the prices also of non-exportable foods. And we must utilize the latter products in the fullest measure to permit the liberation of greater supplies of the former for our armies in the field. It would seem that necessity in 1918 will make for high prices and the consequent rationing of food by all our people, regardless of when the war ends.

That it is his duty to produce foodstuffs need not be told the farmer. He realizes his duty as well as any element of the Canadian people. He practices thrift, he works long hours, he studies how best to meet a perilous situation. He will continue to do his part throughout the war as loyally as he has thus far.

Government Help With Labor

The Labour Problem is the most pressing. Ontario farms are undermanned. Only from cities and towns can more help come. But machinery

will be of assistance. Fifty-three tractors, owned by the Ontario Government are at work right now plowing and preparing the soil. This number will be greatly increased as rapidly as possible. They do the work at cost—write for particulars. Wider horse-drawn machinery will also help. Gang plows do not plow as nice a furrow, but the results are just as good. They will do much this year to turn the land for 1918 crops.

In view of the world shortage of food and consequent higher prices, the labor situation and present weather conditions, certain points may be therefore emphasized with reasonable assurance regarding our preparations for the 1918 crop.

Some Crop Suggestions

Wheat. As much land as possible can profitably be plowed after haying for winter wheat. The seed sown should be of good quality, stand-

of labor to plow land in the fall for the spring crops. In Ontario we have to-day 40,000 acres more in sod than we had four years ago—and there has been no corresponding increase in livestock. Much of this is old pasture which yields little food. Government tractor or a gang plow would do much to turn over your part of this acreage of old sod. After the rains in fall the land will plow more easily. But, of course, it will not be wise, even though prices may be high, to attempt to crop more than can be handled properly.

Fertilizers. In preparing for fall sown crops and spring crops alike it is well to consider very carefully the manure question. Farmyard manure should be so applied as to give best results, while in many cases it can be profitably supplemented with commercial fertilizer. Write for fuller information regarding the question.

Live Stock. Our armies allied must have meat and Ontario is by nature and development a livestock province. But the great demand for food grains and consequent high prices of concentrates is tending to encourage feed crop production rather than fattening livestock for market. The livestock man's slogan may safely be "marry on." His foundation stock must be maintained in his own good interests and in the best interests of the province. It will continue to command extremely high prices for some years after the war. But each animal should be studied closely and every individual which will not pay its way should be sold. This is a splendid time to unload for meat every breeding animal which is not giving a profitable return.

Information Gladly Furnished

For immediate and definite information in detail concerning:

Latest approved methods of preparing land for winter wheat, winter rye or any field crop. Best varieties of any of these crops for your particular section of the province.

Special information regarding fertilizer requirements for any crop. How to treat wheat for smut.

How to secure a Government tractor to do your plowing at cost. Different kinds of plows, field machinery, etc., and their efficiency in practice.

Methods of economical feeding of any kind of livestock.

General market conditions in relation to any branch of the livestock industry. When it will pay to feed mill-feeds, and the feeding value of these feeds as a by-product. Or any other question regarding the preparation for next year's crop of any of the Commodities of Agriculture, Parliament Buildings, Toronto.

IS YOUR FARM FOR SALE?

If so let us know. Many returned soldiers with some capital, will wish to buy good farms in Old Ontario, conveniently located and at a reasonable price. To facilitate these purchases the Ontario Department of Agriculture is compiling a list of suitable farms for sale, and will put owners on their feet and prospective buyers in touch with each other.

SEND FULL INFORMATION

If you wish to sell kindly forward a complete description of your farm—the location, distance from church, school, post-office and nearest town, and the condition of the roads, nature and condition of soil, amount of drainage ditches and required. Kind and condition of fences, number of acres and how cropped, noxious weeds prevalent, complete description of buildings and source and condition of well water. State sum for which you will sell.

Write at once the Office of the Commissioner of Agriculture, Parliament Buildings, Toronto.

ard variety, unimixed, high vitality, thoroughly cleaned of every impurity and treated for smut. The seed bed should be properly fitted. It's a waste of much good seed to sow it in poorly prepared land. Dawson's Golden Chaff, The American Banner and American Wonder are high yielding varieties, but rather soft in grain. Imperial Amber and Michigan Amber are good general purpose varieties. Where winter wheat is not a reasonably sure crop, spring wheat should be a judicious cash crop. Winter Rye. If it is impossible to sow winter wheat by the latter part of September—at latest—winter rye will give good results. It is very hardy, yields well and will stand later seeding than the wheat.

Keep the plow going. It is wise, both from the standpoint of production of crops and of economy

Ontario Department of Agriculture
PARLIAMENT BUILDINGS, TORONTO

Sir Wm. H. Hearst

Minister of Agriculture

G. C. Creelman

Commissioner of Agriculture



ONTARIO