

The Farming World

A PAPER FOR
Farmers and Stockmen



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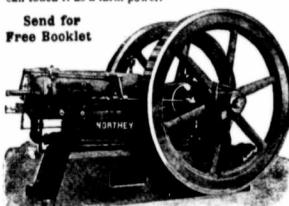
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| | Per acre. Ton. Lbs. | Per acre. Ton. Lbs. | Per acre. Ton. Lbs. | Per acre. Ton. Lbs. | Per acre. Ton. Lbs. | Per acre. Ton. Lbs. |
| RED COB ENSILAGE | 24 1170 | 18 300 | 27 1440 | 14 1964 | 33 | 23 1375 |
| Early Mastodon | 24 1,096 | 21 1,450 | 27 1,200 | 8 764 | 29 1,400 | 22 558 |
| Cloud's Early Yellow | 24 1,096 | 12 1,850 | 27 1,000 | 12 420 | 26 1,400 | 20 1,440 |
| GIANT P. ENSILAGE | 22 1100 | 16 1550 | 25 380 | 15 492 | 38 450 | 23 1194 |
| Earley Butler | 21 1,340 | 12 970 | 24 1,940 | 12 552 | 24 1,300 | 17 1,780 |
| Evergreen Sugar | 21 900 | 11 550 | 14 160 | 6 540 | 16 1,000 | 13 1,830 |
| Rural Thor W. Flint | 20 1,800 | 23 1,850 | 29 1,840 | 18 620 | 23 200 | 23 462 |
| Champion W. Pearl | 20 247 | 16 1,220 | 21 1,566 | 16 1,264 | 28 1,760 | 20 1,610 |
| Sanford | 20 113 | 29 1,800 | 23 200 | 13 1,720 | 22 1,100 | 20 186 |
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| WHITE CAP YELLOW DENT | 19 170 | 17 1200 | 28 1200 | 12 1740 | 25 160 | 20 1294 |
| Extra E. Huron Dent | 18 1,188 | 15 1,020 | 23 200 | 11 572 | 25 1,940 | 18 1,773 |
| Mammoth Cuban | 18 80 | 16 1,770 | 20 1,800 | 9 216 | 20 1,800 | 17 333 |
| King of the Earliest | 17 1,209 | 17 100 | 19 940 | 10 1,780 | 24 1,610 | 17 1,926 |
| High-light-rowed Flint | 16 1,446 | 16 1,770 | 24 1,960 | 11 968 | 24 1,000 | 18 1,603 |
| North Dakota White | 16 1,456 | 17 1,770 | 22 1,100 | 8 220 | 24 1,320 | 17 333 |
| Longfellow | 14 1,929 | 17 650 | 23 1,980 | 10 1,384 | 20 1,980 | 18 529 |
| Pearce's Prolific | 14 1,113 | 16 1,300 | 25 600 | 9 1,800 | 24 1,000 | 18 1,742 |
| Angel of Midnight | 14 1,060 | 16 450 | 24 1,720 | 11 1,232 | 21 900 | 17 1,472 |
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The Farming World

For Farmers and Stockmen

VOL XVIII

MARCH 19th, 1901.

No 29

The Dressed Beef Trade

The Outlook as Based on English Market Conditions

CHE movement to establish the dressed meat trade in this country on a large scale is worthy of careful consideration by every one interested in the development of the live stock industry of this country. That this country is in a position to establish a large trade of this kind very few will doubt, and just now the time seems very opportune for getting the business under way and opening up a market in the old land. Our farmers, however, must be educated up to the necessity of producing a better class of beef cattle than they are now doing. A dressed meat trade cannot be successfully developed unless there is in the country the right quality of cattle or sheep to back it up. Then there should be a sufficient quantity of the right kind of stuff to keep a large establishment going all the year round. To keep up the supply our farmers must learn to feed and fit their animals for market, and not sell them off as stockers when a year or two old to the first drover who comes along.

The dressed meat trade with Great Britain has grown enormously during recent years. To all appearance the demand for live foreign cattle and sheep is steadily falling off in the United Kingdom, as the trade in refrigerator and frozen meats from various countries becomes more firmly established. Some figures published in a recent issue of the Chicago "Live Stock Report," and which were carefully compiled by a large English firm dealing in this trade, show pretty clearly the tendency of the live and dressed cattle trades as we have indicated.

The following figures show the total weight of United States and Canadian refrigerated beef, Australian, New Zealand and South American (River Platte) frozen beef, and Continental fresh killed beef imported by the United Kingdom for the years 1899 and 1900:

| FROM | LBS. 1899. | LBS. 1900. |
|--------------------|-------------|-------------|
| United States..... | 275,679,600 | 286,723,800 |
| Australia..... | 60,921,600 | 39,519,100 |
| River Platte..... | 15,036,800 | 41,196,200 |
| New Zealand..... | 13,442,700 | 32,946,700 |
| Canada..... | 9,023,800 | 4,508,400 |
| Continent..... | 6,157,700 | 7,936,800 |
| Totals..... | 380,262,200 | 412,831,000 |

The imports of live cattle for the past two years were as follows:

| FROM | NO. HEAD, 1899. | NO. HEAD, 1900. |
|----------------------|-----------------|-----------------|
| United States..... | 321,229 | 350,209 |
| Canada..... | 94,660 | 104,328 |
| South America..... | 85,365 | 38,562 |
| Other Countries..... | 2,250 | 2,035 |
| Totals..... | 503,504 | 495,134 |

The most striking fact in connection with the first table is the material increase in the total amount of beef consumed, and in spite of the fact that large shipments of frozen meats were diverted from the Australian colonies to South Africa, China and the Philippines for army purposes. A new field seems to be opening up for refrigerated meats in supplying British and American troops engaged in active service. Then the quality of nearly all the dressed meats sent to England during 1900 shows considerable improvement, especially those coming from South America. The closing of British ports to live cattle from that country greatly increased the exports of dressed beef, and along with it came a remarkable improvement in quality. Frozen carcasses from South America brought prices from below Australian almost up to a par with New Zealand quotations. The top Australian quotation for 1900 was 9c., while American hindquarters reached 14c. per lb. This improvement in quality, which was quite noticeable in the dressed meats from all sources, is due largely to greater care in packing shipments and in the general conduct of the business. Several successful experiments were made last year in bringing beef from the River Platte to England in a chilled condition, and arrangements are being made for small regular shipments with the mail steamers, which make the trip in twenty-one days.

The United States and Canada practically have had a monopoly of the live cattle trade with Great Britain since the embargo on South American cattle, but as the totals of the second table show, there was a decrease of 8,370 cattle in 1900 as compared with the year previous. The shipments from the United States and Canada, however, show considerable increases but not enough to make up for the large shrinkages in South American shipments, which it is doubtful will ever be up to what they formerly were.

The foregoing gives a pretty clear idea as to the general trend of matters in so far as the

live cattle and dressed beef trades with the old land are concerned. That the latter is increasing at the expense of the former seems quite evident, and it is for Canada to place herself in proper relation to the general tendency of this whole matter. If the dressed beef trade is to predominate we should be in a position to take advantage of the situation and establish this trade in this country on a sound and permanent basis. In view of this trend in the English trade the action of the local Government in encouraging the establishment of large abattoirs, etc., in Toronto is timely. Only a few days ago it was stated that a strong company had been organized to undertake this work, and everything seems to point to the dressed meat trade being firmly established in this province at no distant date. Once established there is no reason why Canada should not compete successfully with every country sending refrigerated meat to England. It seems to us that our only real competitor in this trade is the United States, and we have all the advantages that she has in nearness of market, etc. The one great point in which she excels is in point of quality. As to the Australasian colonies and South America we have a very great advantage as regards distance, and should be in a position at the start to take a place far in advance of these countries. But quality is a most important factor in developing this trade, and until we are in a position to turn out the very best we shall never be able to command the highest prices for our product in the British market.



Co-operative Egg Selling

One of the most important suggestions made by any of our correspondents in the recent poultry census is that contained in Mr. A. Mains' answers, in which he outlines a co-operative method of handling poultry which has been found successful in the neighborhood of Brantford. The co-operative method of handling farm produce will remove, in a large measure, all the difficulty that now surrounds the marketing of the more perishable articles produced on the farm, and especially that of eggs and poultry. A system of cold storage should be established at one or more points in every township, either under municipal control or organized in the same manner as are the cheese factories throughout the province. In a very short time it is certain that by means of refrigeration we shall be enabled to ship to Great Britain perishable food products of all kinds, including dressed poultry and eggs, from almost every railway station in the province, and then we shall be able to obtain the highest market prices for all our products, less only the actual cost of handling in transportation.

This subject of co-operative selling of perishable farm produce is a most important one, and we should be glad to hear from parties who have had any experience with it, or who have any suggestions to offer as to the best means of bringing it about. The Government appears to be willing to encourage every effort made in this direction, and it only remains for the farmers to take up the question seriously to make it a success. It is often said that farmers are the only class of people in the country who will not work together, or trust each other.

This may have been so in the past, but their co-operative work in establishing cheese factories and creameries shows that the day of mutual distrust has gone by, and that they are now quite as capable of conducting business for mutual advantage as are other people. They only require to put their usual energy into the co-operative storage and selling business to make it a great success.

Railway Rates and Auction Sales

The success which has attended the Provincial Auction Sales at Guelph and Ottawa in all probability makes these events an annual fixture for many years to come. If so, those in charge cannot begin too soon to prepare for future sales. As early as possible the dates for next year's sales should be announced and the work begun of getting breeders in the United States and our Western and Eastern provinces interested in them.

The success of these sales will depend in no small degree upon the action of the railway companies in granting passenger and freight rates. At the recent sales the freight rates obtained in Ontario were satisfactory, but they should prevail all over Canada. Buyers, both from the Maritime Provinces and from the Western plains, will hesitate to pay very high prices for good stock if they have in addition to undergo exorbitant freight charges in order to get their purchases home. Our railway companies are surely working against their own interests when they object to granting the same freight rates on stock returning from the sales in all parts of Canada as were in force this year in Ontario. The more good breeding stock that is taken to our Western provinces the better for the railways tapping that country, in that they will have more freight to carry out over the long hauls in the way of shippers' cattle, dressed beef, etc. So we say it is just as much in the interest of the railway companies as of the people living in these outlying districts, that every advantage in the way of cheap freight rates and shipping facilities should be granted purchasers of pure-bred stock at these sales.

As to passenger rates, we think the arrangements this year were far from being satisfactory. Why should public sales of this nature, that are of such general benefit to the country at large, and to the railways in particular, be subject to the same conditions to secure reduced rates as an ordinary, everyday convention? There were fully two-thousand people present at the Guelph and Ottawa sales, and these had to submit to the annoyance and inconvenience of the certificate plan in order to get the advantage of reduced fares. At best this certificate plan is a nuisance and the cause of a lot of trouble and vexation. At Ottawa we know of several cases, and one in particular, where the local station agent refused to grant certificates, because, as he stated, he had not received official notice from headquarters to grant them. There should be some remedy for a condition of affairs like this. If it is not now a regulation of our railway companies, it should be, and every station agent should be compelled to grant a certificate when asked for it. Another grievance was that parties from a distance, such as in Manitoba and the Maritime Provinces could not get reduced rates to cover both sales, which was certainly a serious drawback

where a railroad fare meant from \$25 to \$50. These difficulties should be remedied another year by the granting of return tickets for single fare, without any certificate. In addition to this, the one ticket, where practicable, should cover both the Guelph and Ottawa sales, and be good at least for thirty days. It is due prospective buyers from a distance that this privilege should be granted.

This matter of freight and passenger rates should be looked into right away and pressure brought to bear on the railways by the Dominion and Provincial Ministers of Agriculture, if need be, to obtain these advantages. There are other matters, perhaps, of weight in connection with future sales that need attention, but this one of better railway rates, in our opinion, is of first importance, and should be given attention without delay.

Tuberculin Test Regulations As Applied Between Canada and the United States

In last week's issue we published a statement made by the Hon. Mr. Fisher at the Ottawa sale, in regard to his negotiations at Washington, re the tuberculin test. Since then we have received from Mr. Fisher, for publication, the following detailed statement as to the results of his mission:

"In consequence of the imbroglio which the testing for tuberculosis of cattle going into the United States had reached, I arranged to discuss the matter with Secretary Wilson in Washington, and went down there last week. I found that what the breeders had so insistently demanded and what the Breeders' Gazette had so aggressively insisted upon, namely, that the tuberculin test should be done away with for animals going into the United States from foreign countries, was quite impossible.

"Mr. Wilson, Secretary of Agriculture, said that he felt that he was absolutely right in his policy, and that he was not going to be driven from that position, especially as the law of the United States required such action.

"Under these circumstances the hopes of our own breeders that the tuberculin test should be entirely removed, as between Canada and the United States, were impossible of fulfilment.

"Formerly the United States Department accepted the certificate of test from any Canadian veterinary whose name I submitted to them. Having taken the steps which they did they now are not prepared to go as far as this, but will accept the certification of any of my Department officers, just in the same way as they take the certificates of their own Departmental officers.

"For the purpose of facilitating this work and relieving the burden as much as possible on the breeders of Canada, I have decided to appoint a few more Departmental officers and do this testing free of charge for export as well as for the freeing of our herds of tuberculosis.

"In connection with the importations from England the United States Department is also willing to accept the certificate of an officer of mine in England, just the same as they accept the certificate of their own officers whom they have sent over.

"As our own importers much prefer to have

their cattle tested in England rather than in our quarantine on this side, I have decided to facilitate importation by sending over a thoroughly qualified officer, who will remain in England and be at the disposal of breeders there who wish to import to this country, and his certificate of test will be accepted for cattle going through to the United States, without further test here or at the frontier. This will be a considerable expense to my Department, but I feel that it will facilitate the important work of our live stock breeders so much that I am justified in adopting the course. I am sure that the Canadian live stock men will appreciate these steps, and while they have not secured all that they had hoped, the arrangements made will relieve them of much embarrassment and assist them to continue that profitable trade in cattle between Canada and England and the United States, in which they have done so well."



The Value of Pasture in Swine Feeding

We have had several inquiries lately as to the value of pasture for hogs, and more especially as to the value of alfalfa or lucerne for this purpose. During the past four years a series of experiments along this line have been conducted by the Utah Experiment Station to ascertain the profitableness of different methods of utilizing pasture and green foods for swine. The quality of the meat produced was not taken into account, the economic side of pork production only being considered. As the quality of the meat produced is an important factor with us in all methods of feeding the bacon hog, these experiments will not have the value they otherwise would for our readers. However, as they deal with the economic side of the question very fully, the following summary of the experiments will be of value to our readers:

1. In pork production economic use may be made of pasture in connection with a full grain ration. This is shown not only by the average results of all the experiments conducted but also by every point of comparison in each separate test. The average shows the gains of the pasture sets to be 33 per cent. the higher and to have been made on 10 per cent. less grain.

2. The average results of four seasons' experiments show quite conclusively that mixed pasture is not beneficial to pigs having a full supply of grain and skim-milk.

3. The average of the seven trials, made in both pens and yards gives results favorable to grass feeding in connection with grain rations. The pen sets having green stuff made 33 per cent. greater gains than those without, and required 40 pounds less grain for each one hundred pounds of gain.

4. Pasture with grain rations, averaging all the experiments, gave slightly better results than green stuff cut and fed in connection with grain in pens and yards. Where lands are cheap and labor comparatively dear, it seems advisable to follow the pasture method.

5. Pigs running on pasture with partial grain rations produced gains at the least cost per hundred pounds, the quantities of food required standing in the following relation: Full grain ration 100, three fourths 94, one-half 82, and one-fourth 66. But the total gains of those receiving full grain rations were so much greater

that even with the smaller rate of profit the total net gain per pig very much exceeded that of the partial ration.

6. In the quantity of grain required for one hundred pounds of gain, the sets having a one-fourth grain ration excelled in every test requiring the lowest amount and giving the highest per cent. of profit.

7. In rate of gain the sets receiving a full grain ration were the best, in all cases making the largest total gain and giving decidedly the highest total profit.

8. Alfalfa without other food, whether pastured by pigs or cut and fed to them in pens, furnished only enough nutriment for bare maintenance. When additional food was given the rates of gain were nearly proportional to the extra quantities they received.

9. Alfalfa supplies a good supplementary food in connection with bran and grain, but it is too coarse and bulky to be fed alone to the pig whose digestive tract is especially adapted to concentrates.

10. Alfalfa hay and sugar beets each give profitable returns in connection with a limited grain ration in winter feeding.

11. In 2 out of 3 experiments better results were obtained by feeding bran and corn meal or ground wheat dry than wet. The average of the three tests gives a result slightly favorable to the dry food in rate of gain but favorable to the wet in the amount of food required for one hundred pounds of gain.

12. In the several tests reported the feeding qualities of unspayed sows were found to be fully equal to or slightly better than those of barrows.

13. In a single test with spayed and unspayed sows, the results were slightly favorable to the open sows.

To Test in England

It was reported just before going to press that Dr. J. M. Rutherford, ex-M.P. for Macdonald, Manitoba, had been asked by the Hon. Mr. Fisher to accept the position of Canadian representative in Great Britain to tuberculin test all cattle purchased there for importation into Canada. We understand that Dr. Rutherford will accept the position and will proceed to England shortly to take up this work. He will probably make his headquarters at Liverpool.

CORRESPONDENCE

Manurial Value of Bran and Clover

Editor THE FARMING WORLD:

In a letter received from Mr. Delly Bennett, Russelton, Ont., he quotes the statement of an Institute lecturer, in which it is said a ton of bran is worth \$11 and a ton of clover hay \$7.47 as manure when fed on the farm. I am asked to reply if this is correct, and if the values given take into account the fertility value retained by the animal, and incidentally to show how these values are made.

For the benefit of your readers who are interested in the growing problems of agricultural chemistry, I beg to submit the following statement:

First, it is evident that the above reference to the statement showing that a ton of bran is worth \$11 per ton, and a ton of clover hay \$7.47, represents only the manurial value previous to being fed, as shown by the following table:

| BRAN, 2,000 LBS. | | |
|--------------------------------|--------|---------|
| Nitrogen, 45 lbs. @ 15c. | \$6.75 | |
| Potash, 27 lbs. @ 5c. | 1.35 | |
| Phosphoric Acid, 54 lbs. @ 7c. | 3.78 | |
| | | \$11.88 |
| CLOVER HAY, 2,000 LBS. | | |
| Nitrogen, 40 lbs. @ 15c. | \$6.00 | |
| Potash, 40 lbs. @ 5c. | 2.00 | |
| Phosphoric Acid, 14 lbs. @ 7c. | .98 | |
| | | \$8.98 |

The above values are based upon current prices for these constituents in commercial manures.

The proportionate value that may return in the manure will depend invariably upon the animal and purpose for which the food is fed. Prof. Roberts estimates from actual experiments that about 60 per cent. of the total manurial constituents is returned in the manure from cows. The composition of the manure, however, varies again in different ways in the same class of stock. If an animal is gaining rapidly in bone formation or producing young, the phosphate is more largely retained; if in flesh or producing milk, the potash and nitrogen are retained more proportionately.

Considering the great losses that occur where manure is kept leaching and heating on the average farm for six months at a time, the above manurial values could scarcely be expected to be one-half or even a quarter the amount estimated.

An inference may be drawn from the above values that a stock food is seldom worth more to the farmer, when compelled to buy, than its manurial value. This is not, however, absolutely a safe conclusion. At current market prices a ton of bran is worth about the same as a ton of oats (at 30c. per bushel). But there is a manure value of only \$7.34 in the oats, leaving an extra value in favor of the bran of \$4.54 per ton.

At present prices, therefore, it would, no doubt, pay in many cases to sell the oats and pay the seemingly high price for bran.

Wm. J. Thompson.

Barrie, Ont.

More on City Milk Supply

Editor THE FARMING WORLD:

In your issue of Feb. 19th a letter appears from Mr. R. Reid, of Berlin, Secretary of the Canadian Jersey Breeders' Association, in which he says Mr. Massey's statement on this subject is absolutely correct. In the issue of The Farming World of January 15th, page 477, Mr. Massey refers to prices paid per cwt. in foreign cities, but as to Toronto milk here is the exact quotation of what Mr. Massey said as printed in The Farming World of the above mentioned date: "The 1,600 cans of milk supplied Toronto annually average barely 3 per cent. and for which \$1.40 is paid." Now there is no milk sold in the city of Toronto by the cwt., and, therefore, both Mr. Massey and Mr. Reid are absolutely incorrect.

Alex. Tait.

Malvern, Ont., March 7th.

How to Feed and Care for Dairy Stock for the Greatest Profit

Paper read by C. P. Goodrich, Wisconsin, at the Annual Convention of the Western Ontario Dairymen's Association, January, 1901

BRING UP THE CALF RIGHT.

If we are to get the greatest possible profit out of a dairy cow, she must be brought up right. She must be fed right from the start. One must have a clear and definite idea of what he wants, and work to that end from the beginning. What is wanted is a cow capable of consuming, digesting and turning food into milk. We do not want the cow to turn her food into flesh and body-fat, excepting just enough to keep up her strength and health.

MUST NOT FATTEN THE CALF.

To get such a cow the calf must not be fed on food that is too fattening. The calf should be fed its mother's whole milk for a week, then substitute skim-milk for a part of her feed, gradually increasing the proportion of skim-milk till, in about two weeks, the milk may be all skimmed. When the change is made to skim-milk it is best to add a little oil-meal gruel or flax-seed jelly. A tablespoonful of oil-meal a day is enough at first, but it may be gradually increased to two tablespoonsfuls.

The oil-meal is prepared by dissolving it in hot water and mixing it with the milk. The flax-seed jelly is made by boiling the seed. This can be mixed with the milk. Not more than half as much flax-seed should be fed as oil-meal.

MILK FED WARM AND SWEET.

The milk should always, especially when the calf is young, be fed warm and sweet, and warmed to blood heat. It is better to feed three times a day when the calf is young. The amount of milk to feed the calf will vary greatly. Judgment must be used, but be sure and not feed too much. Do not feed more because the milk is skimmed. It will do to feed 10 to 12, or even 15, pounds a day when young, and this can be increased some as the calf grows older.

MUST BE INDUCED TO EAT COARSE FODDER.

The calf should be induced, as soon as possible to eat hay and oats. Some nice early-cut clover hay should be put before it. Oats may be put in its mouth, or on the end of its wet nose, and then it will lap out its tongue and get some of the oats in its mouth.

I keep up this kind of feed till the calf is 6 or 8 months old. This kind of feed will make it grow rapidly; build up its frame and muscles; but will not make a dairy-bred calf fat. If it has been induced to eat the coarse fodder, possibly by having that of the best quality and most palatable kinds furnished it in good variety, then the calf will develop a large stomach and great capacity for handling and digesting good.

FALL CALVES BEST.

I prefer calves dropped in the fall; then, after the milk and other winter feed is taken from them, they should be put on good pasture where they will keep right on growing. The next win-

ter they should be fed on a good muscle-forming ration like clover hay, with a little bran or a few oats, with corn fodder and straw for a variety.

If a heifer calf, I care not how well-bred in dairy lines she may be, is allowed to run with her mother, and have an abundant supply of whole milk till she is 6 months old, she will be permanently injured for a dairy cow. If, in addition to this, she should be fed fattening foods, like timothy hay and corn and kept very fat up to the time of becoming a cow, and you then ask her to give you a good lot of milk, she will, as Prof. I. P. Roberts says, say to you, "I cannot you taught me to make tallow."

I lay great stress on this point of bringing up the heifer right and keeping her from forming the beef habit. I have seen too many heifers that ought to have turned out superior cows make very ordinary ones from this cause. They would give a good mess of milk for a short time, then the flow would fall off, and if good feeding was resorted to, to keep it up, the beef habit would assert itself and meat would be made instead of milk.

The heifer should commence the business of her life, that is, giving milk, at about two years of age. After coming in she should be fed but little grain or concentrated food for a few days. Good hay and a little bran at first is enough. The grain feed can be gradually increased till in three or four weeks she is on full feed.

FEED TO FULL CAPACITY.

Now she should be fed to her full capacity. By that I mean all the food she can consume, digest and turn into milk. It takes a certain amount of food to sustain life. This we call the food of support, which is from one-half to two-thirds of "full feed." The only part of the food we get any return from is what is fed in excess of the food of support. If only the food of support is given the cow, she can only live, and can give no milk without taking it from her carcass. This she cannot do except for a short time, and in feeding that way we simply throw away the feed we give.

SHORT FEEDING MAKES DEAR BUTTER.

Let us suppose that the food of support of a certain cow would cost 6 cents a day; and suppose this cow could consume and make good use of 10 cents worth of the same kinds of food per day, and on this she would produce one pound of butter. Now we have 6 cents food of support and 4 cents food of production, making 10 cents as the food cost of a pound of butter.

Now suppose we attempt to economize by cutting down the feed to 8 cents per day. Then we would have 6 cents food of support and 2 cents food of production, which could produce only one-half pound of butter per day, making the food cost of a pound of butter two days' feed or 16 cents.

Suppose we should try still further to economize in feeding this cow, and feed only 7 cents'

worth of food a day. Then we could have 6 cents food of support and 1 cent food of production, which could produce only one-fourth pound of butter, or it would take four days, at 7 cents a day, or 28 cents in feed, to produce a pound of butter.

The poorer we feed the greater will be the cost of a quart of milk or a pound of butter or a pound of cheese.

DON'T FEED TOO MUCH GRAIN.

Although I advocate feeding to full capacity on the score of economy and profit in production, yet I do not advise feeding all the grain or concentrated food the cow will eat, to the exclusion of some of the coarse fodder she ought to eat, especially where, as is usually the case, the same food elements cost less in the form of coarse fodder than in concentrated.

Besides this, a cow is equipped with a stomach and digestive organs made for handling coarse fodder, and we have brought up our heifer in such a way as to develop her capacity for handling it, therefore a large proportion of her daily ration must be coarse fodder, or she cannot be in good health.

SOME GRAIN NECESSARY.

On the other hand, a good dairy cow cannot eat enough of bulky fodder to do her best, and, therefore, she must have some grain or concentrated food. But the question is, what proportion of her food should be concentrated?

My rule is that about one-third and never more than one-half, of the entire weight of her daily food should be concentrated. This is only a general rule, which needs to be modified to suit each individual cow.

I feed grain food somewhat in proportion to the amount of milk or butter a cow can be made to produce, those that can be made to produce the most getting the most grain, and those that do not respond to the grain food well in milk, but go to laying on flesh, should have less.

The feeder must watch his cows and see what they do with their food; watch to see that they eat it up clean with a good appetite; watch to see that it is well digested, and watch to see what is done with it, whether it goes to the milk-pail or on the cow's back.

No more food should be given a cow than she will eat up at the time. Have none left over in the manger to be mussed over and breathed on. She will eat more and do better if she is fed in this way.

BALANCED RATION.

Cows should be fed a properly balanced ration. Experience has demonstrated that the proportion of digestible protein and carbohydrates should be about as one to five and a half or six.

The chemist examines the amount of the different elements in the food, and tells us what, in his opinion, a cow ought to produce with it, but the cow must be consulted before the final verdict can be rendered. The food must be palatable to her or she will not eat it. It must be easily digested or she cannot use it. It must be healthful for her or it will make her sick.

All cows do not want to be fed alike. Cows that are inclined to put on fat should be fed less of the carbohydrates, such as is contained in corn; and more protein food, like gluten food, oil-meal, buck wheat middlings, etc., while those that are inclined to milk down too thin

should be fed more corn or other carbonaceous food.

The feeder should study to give cows as great variety of food as possible. They love a variety as well as we do, and if allowed freedom to get a variety, will have it, and do much better than if confined to one or two kinds of feed, no matter how good those foods may be.

SUCCULENT FOOD.

Green succulent food is better for milk production than the same kind of food cut and dried, no matter how carefully cured. We should always provide some good soiling crop for time of summer drought, so that cows should never be without good succulent food in summer. In winter they do much better if fed succulent food. We cannot have grass, nor green corn fodder, but we can have the next thing to it, we can have silage.

The cost of producing milk can be greatly reduced by means of the silo. It reduces the cost of feed and increases the flow of milk above what can be obtained by feeding all dry feed. The cheapest and best way to provide summer feed to help out dry pastures is by having a summer silo.

Succulent food may also be provided for winter by raising roots, but they require more labor than silage does, to provide the same amount of food value.

Regularity in feeding is of great importance. Cows should be fed as nearly as possible at the same time each day, then they will not be worried waiting for their feed.

HOW MANY TIMES A DAY TO FEED.

Many good dairymen advocate feeding but twice a day while others insist that it is better to feed three times. I have always been in the habit of feeding three times a day with coarse fodder and twice a day with grain. Perhaps the cows would do just as well to leave out their noon feed of fodder, and give more night and morning, after they got used to it, but I am sure they would not at first; and I have never had the heart to disappoint them by not giving them their noon feed. I think this having feed three times or only twice a day is a matter of habit with cows, the same as it is with men.

CARE OF COWS.

The most important thing in the care of cows is to see that they are comfortable. They cannot do well unless they have comfort. Don't have them lie on a bare plank floor, or, worse still, on a bare cement floor. Give them a good, clean, evenly-made-up straw bed, then they can lie down in comfort, and will lie down and chew the cud most of the time, standing up only long enough to eat and be milked.

The temperature of the stable should be comfortable, never getting down below freezing. At the same time the ventilation should be such that the air would be pure and healthful.

Cows should have water at least twice a day, and that at a temperature that suits them, which is surely not ice-water, but 20 to 30 degrees above. They should have free access to salt, or it should be given them every day, from one to two ounces per cow.

COWS SHOULD NOT BE EXPOSED TO COLD OR STORMS.

Cows should never be left out of doors when the weather is uncomfortable. They may be turned out in a yard well sheltered from the

wind on pleasant, sunshiny days in the winter for two or three hours, but when the weather is very cold or stormy, if they are not watered in the stable, which is the best way, they should be out only long enough to drink from a tank a few feet away from the barn and then immediately allowed to go back.

It is cruel, as well as unprofitable, to let cows stay out in the pasture during a cold October rain. One day's exposure to such weather will cause the owner serious loss by shrinking of the milk. If a cow is made to shrink in milk from such a cause she can never be brought back to the amount she would have given if the shrinkage had not occurred.

EXCITEMENT.

Avoid getting cows excited. Driving cows with a dog is very expensive business. A boy mounted on a horse does not always drive cows as gently as he should. Any excitement of any kind, whether it be from a dog or a boy chasing them, blows and rough treatment, loud and angry talk in the stable where they are, will cause the flow of milk to decrease, and it nearly always lessens the per cent. of butter fat in the milk they do give.

I have known two cows to have a hard-fought battle in the yard where all the cows were, and not only the combatants, but nearly all the rest of the cows shrunk considerably in milk in consequence of the excitement. Be gentle and kind to cows always, they will pay you for it in good milk.

MILKING.

The milking should be done in such a way as to please the cow by not causing her pain, and yet get the milk as quickly as possible. Get all the milk but do not keep on stripping after you have got it.

Some persons will go on and tell you just how to do it, how to take hold of the teats, which to milk first, and so on, but I think no rule can be given that will apply to every cow. The milker must find out by practice just how to accomplish the desired object with each cow, and when he has found out the best way, milk her the same way every time.

It is best not to change milkers, but have the same milkers milk the same cows every time. Milk in the same order every time. When you have been in the habit of beginning at one end of a row of cows and taking them by course right along through you will notice that when you have about done with one cow, the milk will begin to drop from the next one to her. She is ready to be milked, she expects to be milked, and then is the time to milk her. But, if instead, you should go to the other end of the line, and get around to her half an hour later, her milk will not "come down" as readily as it would if taken at the right time, there will not be as much of it, and if tested will be found to be poorer in butter fat.

As a rule it is best to have cows go dry 6 to 8 weeks, but there are some persistent milkers that it is difficult to dry up at the proper time. If a cow cannot be dried up at least 3 or 4 weeks before coming fresh, it is better to continue milking right along. If you succeed in drying her only a week or two before coming in, the chances are that she will give very little milk when she does come in, and perhaps fail entirely in milk. But the cases are very rare indeed where by the exercise of proper skill, a

cow cannot be well dried up 4 to 6 weeks before coming in.

HOW TO MANAGE WITH FIRST CALF.

To manage a heifer, or a highly organized dairy temperament, when she comes in with her first calf, in such a way as to make her as good a cow as she is capable of being, requires tact and skill of a high order. After years of experience and trying various ways, I have come to the conclusion, that, all things considered, the quicker the calf is taken from the heifer the better for all parties concerned. If the calf is allowed to suck several days, the cow becomes much more attached to it, and will mourn more and be more likely to withhold her milk than if they were separated at first.

To succeed the best, the milker must, in some measure, take the place of the calf in the affections of the cow. It requires extreme gentleness and kindness, and much petting on the part of the milker to accomplish this. Some persons, men especially, are failures in this respect, and consequently can never be good milkers. Certain it is, no cow that has nervous energy enough to be worth anything for the dairy, will do her best in giving milk, if she hates her milker or stands in fear of him.

Unexhausted Fertility

This is a very live question in Britain and more especially in Scotland, where the tenant on a farm is allowed to claim pay for unexhausted manure he has put upon the land he rents when he is leaving. At a lecture recently given by Mr. John Speir, of Glasgow, the subject was well discussed. In answer to the question, "At what rate per annum is the manurial value of certain fertilizers exhausted, as far as the question has been tested by actual experiment?" the answer as far as it concerns farm-yard manure on four crops at 17 stations, is as follows: First year, 50 per cent.; second year, 24 per cent.; third year, 16 per cent., and fourth year 10 per cent. Practically this means that land getting nothing but farm-yard manure should be dressed every fourth year to keep it in ordinary good condition. The best of Scotch farmers work on a system of rotation of crops much akin to this. The manure is supplied in liberal quantity to the green crop—turnips usually—this is followed by a grain crop, then hay and another grain crop, followed by roots again. This gives two grain crops every four years. Few farmers in Canada have adopted a regular rotation of crops, and fewer still are working on a four year one. This gives no opportunity for pasture, but the Scotch farmer believes in working the land steadily and keeping certain fields for permanent pasture, quite apart from the working land. This system is well worth the careful consideration of Canadian farmers.

HORSE NUMBER.

Our annual horse number which will be issued on April 16th promises to be one of unusual interest to horse breeders. We have arranged for a number of special contributions from practical men which will make this number of great value to farmers and breeders alike. Don't miss it.



Ideal Farm Homes

With this article we present to our readers design No. 43, a house which it would cost to build about \$1,750. This house is, perhaps, not as beautiful to look upon or as artistically arranged from the outside point of view as some of the others that we have presented to our readers, but it has the advantage of being a plain, substantial house. It looks it would suggest a house that

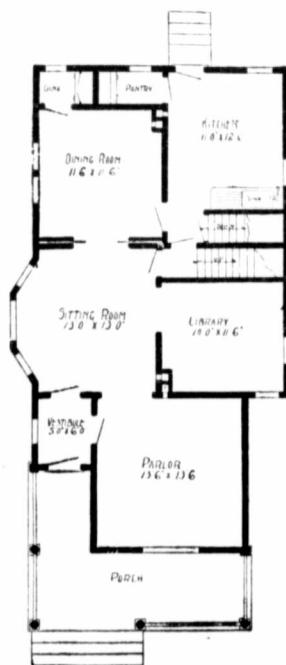
cost anywhere from \$2,500 to \$3,000, but there are good and sufficient reasons why this house can be built for the price that we have stated. A house of more artistic pretensions would necessarily be a house that was cut up more, giving more corners and projections to relieve the eye of these straight lines. At the same time, if you cut a house up too much, it does away with the stateliness or substantial look of the structure.

It would seem to many as though a house of this size, with its nine rooms and bath room, could not possibly be built for the money we name, but, outside of the plumping and mantels, which we do not figure, it can easily be built for this amount in almost any section of the country. In the first place, in order to build this house you have to have the blue prints and specifications gotten out by the architect who drew the plan, or else have some other architect work up blue prints and specifications from this plan. The difference in these cases would be that we would send you the plan for \$5, when you probably could not get it from an architect for less than \$50.

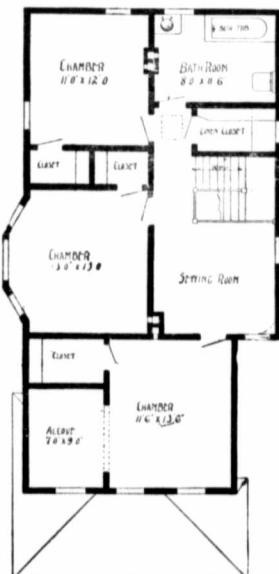
There are many things to be taken into consideration in the building of a house in order that it may be built cheaply and at the same time built well enough to stand the ravages of time, and be what anyone would want for a house for their own occupancy. This house is built plainly. One great advantage that it has in being built in this way is that the rooms are all square, and any housewife knows that a house can be furnished much easier with square rooms than with the misshapen arrangements that we find in many of the modern houses. In designing these plans the architect has always held to the point of putting in

stock sizes of windows and doors and everything that comes in the line of mill work. An architect might take a house of this size, and, by relieving the eye of a little of the setness, putting in windows of various sizes, could make the work cost the builder several hundred dollars more. In reality it would be no better, perhaps not as good.

While we are writing on this line of what the architect can do or cannot do, we want to say that we are not working in any measure against the architect who makes it his business to



First Floor Plan.



Second Floor Plan.

plan houses for builders wherever he can find them. Possibly it would look on the face of it as though we were cutting into the architect's trade in getting up house plans which can be sold for about \$5.00 apiece. If one will look into this point carefully he will find that we are not against the architect, but are really for him. We are getting up plans of houses that cost to build anywhere from \$500 to \$2,000. We are educating the people who want a medium-priced home that they must in some manner employ an architect if they wish to secure a low-priced building and have it artistic and well arranged. How many people are there who build a house ranging in price from \$500 to \$2,000 who would employ an architect, unless they could employ him through us or someone else in the same line of business, who would get them up a plan for what they thought they could afford to pay? These people usually, or heretofore have been in the habit of marking out on a piece of brown paper, or having a carpenter do it for them, something near what they want for a floor plan of their house. Some of the carpenters are quite proficient in drawing floor plans, and once in a while one can draw an elevation and perhaps a perspective view, but this is not often the case. Your carpenter goes to work on the rough plan of which we have already spoken, and the result is a house which is something of a surprise to the carpenter after it is done, and more of a surprise to the owner. Then comes a whole lot of explanation from the carpenter as to why the perspective looks as it does. He followed the owner's plan on the floor plan, and the roof plan had to be made to fit the rest. The result of the whole is the perspective as they finally have it. This is not all. The carpenter guesses from his scratch on the piece of brown paper that he can build this house for a certain amount. He figures it as low as he can because he wants to get the job, but he is continually telling the owner that if this or that or the other is put in, it will cost extra. Usually the bill of extras is, to use an old slang phrase, "as big as a house."

With our plans and specifications you can know before the first nail is driven or the first shovelful of dirt taken from the ground, not only what your house is going to look like when finished, but what it is going to cost. A man who builds a house from one of these plans would be more apt to go to an architect when he was able and wanted a house which would cost from \$15,000 to \$20,000. Therefore, we claim that we are in line with the architects and are assisting our fellow-men who cannot afford to pay for a design that is gotten out only for one house by giving them the benefit for \$5.00 for which they would have to pay another \$50.

(Blue prints and specifications for this dwelling can be had from the office of THE FARMING WORLD for \$5.00.)

Breeders' Notes.

By Stockman.

THE OLD WILTSHIRES.

An old breed of horned sheep, known as the "old Wiltshire breed," and which it was believed had been extinct for many years, has been discovered flourishing in some of the remote valleys of North Wales. It has been brought to light by Professor Winter, who had been making experiments crossing the Welsh Mountain ewes with rams of the Shropshire-Leicester and other well-known breeds. From this breed, which it is found is the Wiltshire, he found the progeny "not only weighed heavier, but handled better and had a better appearance than either of the other crosses. These rams were known locally as "Westerns" or "Horned Westerns," but a careful examination has shown that they are the old Wiltshire breed. They are prolific, hardy, quick feeders, have high quality and die well. On the other hand they are not symmetrical, much more useful than handsome.

SALE OF SHIRE HORSES.

The recent sale in England of the Dunsmore Shires was a great success. They were owned by P. A. Muntz, M.P., who has for many years been a leading breeder of heavy Shires. There were over 800 guests at the luncheon which preceded the sale. Two of the stallions, Dunsmore IXL and Sirling Harold went for \$1,500 each. Two yearling fillies, Lady Love and Gloaming II, exceeded that price, the latter making \$1,600. In two-year-olds Dunsmore Kirby brought \$1,800, and \$1,900 was paid for one of three year-old fillies, June Rose. The aged mare Lockinge Belle made the highest price of the sale, \$3,300. She showed size, weight and good breeding, and made the so far top price of the season. Fifty-two head sold made the splendid average of \$900.

CURB.

If there be no ocular trace of a curb the horse could not be rejected for it, as the eye is generally a better guide in the detection of this accidental defect than the hand. Indeed, if the eye cannot see it the hand will not feel it, for it will not be there.

HIGHLAND SHOW.

The Highland and Agricultural Society of Scotland hold their show this year at Inverness—July 16-19. The secretary is James Macdonald, 3 George IV. Bridge, Edinburgh, Scotland.

NAMING STOCK.

An agitation has begun in England, and has been taken up by the live stock papers against naming young animals with that of some great sire or dam when no blood relationship exists between them. Secretaries of books of records are urged to refuse all such names for registration unless they have

a distinguishing affix or prefix, and be direct descendants of the animal whose name is being used.

ROYAL SHOW.

The Royal Agricultural Society of England hold their show in 1901 at Cardiff, Wales, June 26 to July 1. Secretary is Sir Ernest Clarke, 13 Hanover Square, London W., England.

Farm and Garden Talks.

By Isaac F. Tillinghast.

GREAT VALUE OF LEGUMES.

Perhaps no discovery has been made during the century just closed which is of more importance to farmers generally than the fact that leguminous plants, (peas, beans, lupines and the clovers), not only draw the most important and expensive parts of their food from the atmosphere, but have the power to store away the nitrogen so gathered, into the soil in which they are growing, through small nodules on their roots, so that instead of impoverishing the soil of its fertility, as do most other plants, they leave it actually richer in the most costly element of plant food. Thus the great problem of quickly and cheaply restoring the lost fertility to old and worn out soils has been practically solved. Instead of purchasing a costly fertilizer, rich in nitrogen, it is now found to be only necessary to apply a cheaper grade, containing potash, lime and phosphoric acid, on which can be grown a heavy crop of cow peas, or clover, which will complete the balanced rations by collecting and storing the more costly element, nitrogen, after which grass and grain crops will make a heavy growth. Ordinary grass and grain crops are very exhausting upon the soil, as they draw therefrom their entire food supply, while the legumes add to the soil the most valuable and costly element, thus leaving it richer instead of poorer. Like some men, they leave the earth better for having lived upon it. At the same time the leguminous plants make better hay and grazing than grass plants. The herbage of the legumes is more succulent, more digestible and richer than that of grasses. Legumes will grow and thrive upon soil too poor or deficient in elements required, to produce or support a stand of grass, and will yield a heavier crop than most grasses. Nothing but custom and prejudice favors the continued growing of grasses in meadow and pasture to the exclusion of cow peas and clover.

Poultry and Fruit Growing make an excellent combination. The orchard is never injured by fowls, but on the contrary most excellent work is done by them in destroying injurious insects and weed seeds. The addition of a few bees makes a strong trio, as they, too, are a benefit to the fruit grower as well as direct profit earners. What other helpers have we who cheerfully and persistently work for nothing and board themselves?

The Beginner in Poultry Breeding

Written for THE FARMING WORLD, by P. H. Ross, Waterloo, Ont.

There are many successful poultry breeders throughout this broad Dominion. Breeders who have spent years of time and money in bringing their birds to the front and building up the business. It is to a great extent the success of these that stimulates the beginners in their respective sections. He hears of these parties making certain sales of eggs and stock, and jumps to the conclusion that if Mr. So and So does well with two varieties there is no reason at all why he cannot do even better if he keeps more.

He holds a fair position. He gets the hen fever, looks up some form of records and the result is he starts forth-with in poultry without previously analyzing his subject. He knows practically nothing about the business, but imagines he is now interesting himself in a "get rich quick" enterprise, and that he will soon be able to throw up his regular employment and confine himself solely to the industry of raising chickens with a bright and rosy future staring him in the face. He knows nothing about the build of a hen house. He has perhaps an ordinary small barn, this he divides up into four or five pens, the outside pens will be built when the weather gets warmer. He attends a show, takes a look around, and picks on perhaps Rocks, kind No. 1; Minoras, No. 2; Fighting Games, No. 3; Andalusian, No. 4; Buff Leg-horns, No. 5. A very fine assortment indeed. There are two or three other varieties he would like, but as the pen room is all taken up he cannot add them until he gets the hay loft divided into pens also.

He does not buy birds at the show, because they cost too much, but knows of parties in town who keep the varieties he picked on and wends his way thither to buy stock. He succeeds in getting them cheap, takes them home, and at the end of a week has several settings of eggs. He intends setting these, but he has no setting hen. He gets a couple from his neighbor, sets them in the corner of the hen house, but knows not that he brought lousy chicks into his flock, and that he has now started breeding culs and lice.

The chicks are finally hatched, but the lice take possession almost at once. In the course of a few days he sees something is wrong, but knows not what; and by the time he finds out, perhaps the cat has killed several. Eggs are accumulating—he buys several more setting hens, and now finds that buying stock, feed, chicks, fixing up the barns, that it is all expense and no return, and that he has now invested nearly 100 dollars. He gets just a little discouraged, but pegs slowly on. Fall arrives, he has on hand a lot of young fowl and no place to shelter them in. They are lousy, only half

grown, many appear sick; neither is the stock as fine as that which he saw at the show, and he knows not why, until he is informed that he cannot breed thoroughbred stock from culs.

He is now ~~totally~~ disengaged; and tells everybody to have nothing to do with poultry, and disposes of his stock at a sacrifice, just to get rid of them as quickly as he started the business, all because he did not know how to start. He missed the chance of a life-time. Had he pursued the proper course by looking into the matter a little closer and seen how others succeed he might have been quite as successful himself, but too many think there is not much to learn about poultry, and that it is simply a fancy, and that all that need be done is to buy a few hens and a rooster, a little feed, and nature will do the rest. My young intending breeders do not think you can learn all about fowl in a month. I have seen old grey-haired men who have studied chickens all their lives and are still learning.

My advice to beginners is simply as follows: If you take a fancy to poultry, take it easy, just get a good instructor and an up-to-date poultry journal or two to start with, read up the requirements at your leisure so as to get a little theory into you, see what work there is connected with the keeping of fowl and the raising of chicks; find out how to prepare your hen house, expense connected therewith, etc., get a little advice from your seniors in the business, and if then you are still inclined to go ahead, prepare your poultry house, then attend some good show (it costs a few dollars but that is well spent), see how the older breeders take care of their stock, get what pointers you can from them, and if you have not decided on any varieties pick on just one, and stick to it until you have served your apprenticeship. Buy a trio of good stock at the show; it would be well to get some one you can trust to help you buy them. They might cost you more than you intended to pay, but you must remember that first-class stock cannot be bought at Cheap John prices. You will find that out when you get good stock of your own and have a reputation established.

When you have made your purchase, see that they are properly cared for, but do not overfeed. Breed from them or buy another setting or two from another breeder. These will net you all the chicks you can conveniently look after the first season. They will give you practical experience. Study the choice of your variety with a view to becoming an expert in them, and if you follow my advice I am satisfied you will eventually succeed in your new venture. Do not look for financial results the first year.

If at the end of your season's efforts

your stock is good enough to take to the show room, try your luck, and if not successful do not get discouraged. You may have to make some changes which should suggest themselves by that time, but as soon as you succeed you must blow your own horn by way of an advertisement in the different poultry and farm papers.

Prizes alone will not give you the required notoriety as a breeder, as few people read the returns, neither are all published. You must establish your winnings in your different advertisements until your name becomes a household word, and if you succeed in getting to the front, do not spoil your own chances by selling inferior stock or eggs that you would not set yourself. Sell eggs from the same matings you breed from yourself, and when you offer surplus stock sell good stock only, unless you fully describe what you sell to your client.

No matter what a man pays for stock, if the same is good he will not object, but poor birds will put you on the bum.

Many pleasant hours are spent by brother fanciers visiting each other during the breeding season and comparing notes, and if you once have the confidence of other breeders you will find it a pleasure to call on them when the opportunity affords.

Some Poultry Pointers.

Poultry keepers sometimes seem at a loss to determine whether a broody hen is a sitter or a setter, but in our experience it has more often puzzled us to know whether a cackling hen is a layer or a liar?

Scaly legs in fowls is caused by a microscopic insect or parasite. Dipping in kerosene oil will kill them and cure the malady, but care should be taken to do it early in the day, so the fowl may exercise in the open air until it evaporates. It will then do the fowl no harm.

It is poor policy to use real eggs, fresh or stale, as nest eggs. They are liable to get broken and teach the hens the habit of egg eating. Use artificial nest eggs.

If you will keep the poultry house clean, and provide a proper dust bath, the hens will enjoy making their toilet and keep their bodies clean and free from vermin.

Never allow a sick fowl to "drink from the same cañeen" with the others. The drinking water is the great source of contagion and care should be exercised that it is in no way contaminated.

Buying a thoroughbred male is the first step towards improving your flock. By so doing you buy just half the flock in a breezing sense, and next to buying an entire pen this is the best thing to do.

The Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breed rs 8s; Sheep Breeders', 8s; Swine Breeders', 8s.

BENEFITS OF MEMBERSHIP.

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the Swine Breeders' Association this includes a copy of the Swine Record.

A member of the Swine Breeders' Association is allowed to register pigs at 50c. per head; non-members are charged \$1.00 per head.

A member of the Sheep Breeders' Association is allowed to register sheep at 50c. per head; while non-members are charged \$1.00.

The name and address of each member, and the stock he has for sale, are published once a month. Over 18,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experimental Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the Dominion Cattle Breeders' Association, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association.

The name and address of each member, and the stock he has for sale, are published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the underlaged by letter on or before the 1st of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The date will be published in the most condensed form.

A. P. WESTERVELT, Secretary.
Parliament Buildings, Toronto, Ont.

List of Stock for Sale.

DOMINION CATTLE BREEDERS' ASSOCIATION.

Shorthorns.

Birdsall, F. & Son, Birdsall—Bull, 1 year; cows, heifers, bull and heifer calves.

Bonnycastle, F., Campbellford—Bull, 1 year; 6 bull calves; cows and heifers.

Caskey, Jas., Tiverton—4 bulls, 11 months to 2 years; heifers.

Claus, W. W., Vineland—Bull calves, 10 to 14 months; heifer, 1 year; heifer, 2 years.

Corley, R. Bigrave—Bull, 2 years; bull calf; 7 young cows; 2 heifers, 2 years; 2 heifers, 1 year; 4 heifer calves.

Docker, F. T., Dunnville—3 bulls, 14 months.

Douglas, Jas., Caledonia—6 bulls, 10 to 16 months; young cows and heifers.

Evans, Jno. C., Grimethorpe—3 bulls, 5 to 18 months; 3 cows, 4, 5 and 7 years; 3 heifers, 18, 19 and 23 months.

Garnham, C. A., Stratford—5 bulls, 11 months; bull, 30 months.

Jeff, E. & Sons, Bond Head—8 bulls, 8 to 16 months; young cows and heifers; bull and heifer calves.

Leask, Jas., Greenbank—Heifers, 14 to 18 months.

Milne, D., Ethel—7 bulls, 10 to 18 months; cows and heifers.

Pugh, C. H., Whitevale—2 yearling bulls.

Riddell, Jas., Beeton—2 bulls, 11 and 16 months; yearling heifers and heifer calves.

Sibbald, F. C., Sutton West—3 bull calves; 3 heifer calves; 3 yearling heifers.

Snowden, Sam., Bowmanville—4 bulls, 15 months to 2 years.

Tristain, Jno. & Son, Strathburn—8 bulls; cows; heifers in calf; young heifers.

Holsteins.

Clemons, G. W., St. George—2 bulls, 6 and 10 months; 2 cows; heifer, 1 year; heifer calf.

Smith, S. E., Dundas—2 cows, 3 and 6 years; 4 heifers, 1 and 2 years; 2 heifer calves.

Ayrshires.

Guy, F. L., Darlington—Bull, 1 year; calves of both sexes.

McNiven Bros., Ancaster—4 bulls, 4 to 17 months; cows in calf.

Taylor, F. W., Wellman's Corners—Bull, 2 years; 7 bulls, 8 to 12 months.

FARM HELP EXCHANGE.

The Farm Help Exchange has been started with the object of bringing together employers of farm and domestic labor and the employees. Any person wishing to obtain a position on a farm or dairy, or any person wishing to employ help for farm or dairy, is requested to forward his or her name and full particulars to the "Farm Help Exchange," 125 Yonge Street, Toronto. In the case of persons wishing to employ help, the following should be given: particulars as to the kind of work to be done, probable length of engagement, wages, etc. In the case of persons wishing employment, the following should be given: experience and references, age, sex, and fair department of farm work in which employment is desired, wages expected, and where last employed.

These names when received together with particulars will be published FREE in the two following issues of the "Agricultural Gazette" and will afterwards be kept on file. Upon a request being received the particular family will be published, the names being kept on file.

Every effort will be made to give all possible assistance, to the end that suitable workers, male or female, may be obtained. Every unemployed person wishing to engage in farm or dairy work is invited to take advantage of this opportunity.

Help Wanted.

Two married men with small families, accustomed to milking and caring for stock, and doing general farm work, wanted at once. No. 749.

First-class farm hand wanted on a dairy farm, one who can milk, feed stock carefully, and make butter. Also housekeeper required, good, capable woman for a farm house. Comfortable home and small family. No. 750.

Reliable, experienced man wanted by the year, or for a longer time, if suitable, on a general purpose farm, where mixed stock are kept. If married, he can secure a house close by in the village. Can start at once. Wages \$175 a year. No. 751.

Wanted, a young man, about 18 years of age, to attend to a herd of Shorthorn cattle. Address J. & W. Russell, Richmond Hill, Ont.

Sober, steady, experienced young man wanted for seven or eight months. Good home. State wages expected. No. 752.

Steady young man, between 20 and 25 years of age, who does not object to the inconveniences of a rough, new-cleared district, and is willing to do his best, wanted on a farm near Parry Sound. Wages, \$18 a month, with board and washing. Need not be able to milk. No. 753.

Wanted, man good with horses, sober, honest and industrious. Will provide house and stable, orchard and garden, pasture for cow, and firewood. In winter there will be bush work to be done. No. 754.

Wanted, at once, a man used to all kinds of farm work and machinery. Must be a good plowman, kind to stock, able to milk, sober and painstaking. Protestant preferred. Will engage for a year or for eight months. State wages and give age. No. 755.

Yorkshires.

Rogers, L., Weston—Boars and sows, 3 weeks to 5 months.

Tamworths.

Boyd, Arch., Kars—Young stock of both sexes.

THE AGRICULTURAL GAZETTE

Man wanted on a small farm near Port Burwell. Would have to milk, if required. Would pay \$12 to \$16 a month for eight months, and give a home for the balance of the year for lesser wages. No. 756. a

Five men required at once in British Columbia. Will give from \$20 to \$25 a month and board and permanent employment. No. 757. a

Man wanted by the year who is steady and sober, on a farm where dairying is carried on all the year round. Will be boarded at the homestead. No. 758. a

Good wages given to a couple of good men for a large stock farm near Fort William. Engagement to be for a year and wages paid monthly. One must have a good knowledge of dairying. The other must understand farm machinery. No. 759. a

Man wanted to do general farm work near St. Mary's. Must be a good plowman, gentle with horses, a good milker, and honest and trustworthy, with no bad habits. Would hire by the year or for eight or nine months, and give good wages to a capable man. Give references. Protestant preferred. No. 737. b

Young man wanted for eight months on a farm in Oxford Co. Will pay \$130 with board and washing for that time, or give \$170 by the year. No. 738. a

Wanted, young man for farm work. No. 739. b

Man, or boy, wanted for general work on a dairy farm. Must be a good milker. Address Jas. Stothart, Box 310, Peterboro', Ont.

Wanted at once, on a farm of 200 acres, in Bruce Co., young man, Protestant, for general farm work. Must be a good hand with a team. Will engage for seven months. No. 740. b

Teamster wanted on Iowa Agricultural College farm. Must be quiet and good with horses and keep his harness and team in good shape. No. 741. b

Wanted, man by the year near Portage La Prairie, able and willing to do all kinds of farm work, good with teams and capable plowman. Must not smoke nor have any bad habits, and be a good milker. Good wages given to the right kind of a man. Apply to L. A. Bradley, Box 134 Portage La Prairie, Man.

Good plowman, teamster and cattle man wanted by April 1, on a yearly engagement, for a stock farm in Manitoba. Married man, without family, preferred. House and garden furnished. Must board extra men when required. Also single man, used to cattle, wanted. No. 742. b

Good farm hand, married or single, who can plough well and is a good teamster, sober and steady, wanted on a stock farm in the Eastern Townships. Steady employment to the right kind of a man. Wages

to a married man \$23 a month, house, wood and milk. To a single man \$17 a month and board. No. 743. b

Wanted, single or married man, good plowman, and careful and kind to his team. Must be able to milk and be a total abstainer from drink and tobacco, and be well recommended. Will hire by the year or for 7 or 8 months, as agreed upon. Give experience and wages asked. No. 744. b

Immediate employment by the year to a first-class man who is a good stockman. Must be strictly honest and truthful. House and garden and keep for cow provided. No. 745. b

Wanted, a man for 8 months, or by the year. Must be a good man with horses and plow well, and be willing and able to do general farm work. Protestant preferred. Must not smoke. Wages, \$185 a year or more with board and washing. No. 746. b

Domestic Help Wanted.

Wanted, to work in a farm home and help milk, a steady, healthy, and reliable girl. Family consists of three adults and one child. Wages from \$85 to \$100 a year, according to ability. Must have references. Duties to commence May 1. Apply to Mrs. D. J. McClure, Churchville, Ont.

Wanted, on a farm in Norfolk Co., a smart girl, from 17 to 25 years old, who understands all kinds of housework. Steady employment. State wages expected and give references. No. 747. a

Domestic wanted, to do general housework. No milking or outside work of any kind. Farm is within the corporation of a thriving town. Middle aged person preferred. No. 748. a

Situations Wanted.

Young man, aged 22, who has had nine years' experience on a farm, would like to hire as a general farm hand for five or six months. Wages expected, \$17.50 a month with board, washing, and lodging. No. 915. a

Man, who has always lived on a farm, wants a place as a farm foreman, or would hire to go on a fruit farm by the year. Family all grown up. Would board other hired help. No. 916. a

Young man from the Old Country, who has been ten years in Canada and is well used to horses and cattle and general farm work, and a good plowman, wants a place. Can furnish good references, and is not afraid of work. No. 917. a

Situation wanted as working foreman, by man who is well posted in all branches of modern farming and machinery and is kind to stock. Good references. Would take farm on shares where everything is furnished. No. 918. a

Married man, with family, wants to rent a farm on shares. No. 919. a

Man, used to farming work of all kinds, wants to hire by the year on a dairy farm. Does not use liquor or tobacco, and has no bad habits. Can start April 1 or 8. No. 920. a

Man, aged 50, in good health, who is by trade an engineer, but who can milk and look after cows and horses, wants to get a place. Is used to care and management of machinery of all kinds, and is a fair carpenter. No. 921. a

Good horseman, who understands stock and general farm work, wants a place. No. 910. b

Single man, 50 years old, thoroughly versed in stock-raising, dairying and general farming, in which he has been engaged for 33 years, wants a place as manager of live stock. First-class references. No. 911. b

Young man, 16 years of age, who has worked on a fruit farm and is accustomed to horses, wants a place. Is steady and a good worker. No. 912. b

Young married man, without family, is open to engagement as farm foreman in Canada or the States. Is used to fruit raising, dairying and other kinds of farm work. Must have a house and garden, and will board other men, if necessary. No. 913. b

Domestic Situation Wanted.

Widow, with a little son 7 years old, wants a place. Good references. State wages given. No. 914. a

Position as general servant on a farm wanted by a strong, young woman from the Old Country, who understands dairying and poultry. Wages, \$10 a month. Will arrive in Canada about the end of March. No. 922.

N.B.—Where no name is mentioned in the advertisement, apply to A. P. Westervelt, Parliament Buildings, Toronto, giving number of advertisement.

Farmers' Institutes

Under this head the Superintendent of Farmers Institutes will each week publish matter relating to Institute work. This will include instructions to Secretaries and other officers, general information about Institutes and Institute work, suggestions to delegations, etc. He will also from time to time review some of the publications and experiments conducted at the various Agricultural Colleges and Experiment Stations of Canada and the United States. In this way he hopes to give Institute members some valuable agricultural information which they might not otherwise receive, on account of not having access to the original publications. If any member at any time desires further information along any of the lines discussed, by applying to the Superintendent he will be put in direct communication with the Institution that has carried on the work.

G. C. CERELMAN,
Superintendent Farmers' Institutes.

Grasses and Clovers for Pasture.

Portion of an Address to Institute Members by Henry Glendinning, Manila, Ont.

"No grass—no cattle; no manure—no manure; no manure—no crops."—*Belgian Proverb*.

A remarkable combination of circumstances has brought about a change of conditions in agriculture in this country within the last few years.

Wheat and barley sold in the raw state, no longer take the lead as the money-making crops of this province, but cattle, sheep, hogs, poultry, and the products of these animals are now the sources of income upon which the farmer depends. We may ask ourselves the question, have we, with these newly developed sources of wealth, placed ourselves and farms in the best condition to produce these articles at the minimum cost?

Grass the Most Wholesome and Nutritious Food.—The first requisite for the production of cattle, sheep and hogs, after the mother's milk, is grass, it being the most wholesome and nutritious of foods. The grasses possess and combine, in a remarkable degree, all the nutriments required to build up the body, in the shape of blood, flesh, bone, and fat, and at the same time, so far as food goes, to keep the animal in a perfectly healthy condition. Therefore, pasture or grass is the first essential to the successful growth of these animals and the economical production of beef, mutton, pork, and dairy products. While the farmers have been making great efforts to increase their output of these commodities, by improving their breeds of stock, putting up better buildings, growing more roots, and the introduction, within the last few years, of ensilage, all of which have done much to advance the farmer in the art, and reduce the cost of winter feeding, what has been done by the average farmer in regard to his pasture fields? I venture to say, little or nothing, except to seed down in the usual way a few more acres to grass; and what is the usual seed sown? Timothy and red clover, and, perhaps, a little alsike added, making in all about 10 or 12 pounds of seed per acre. Now, let us follow up and see the result.

First year, the seed is sown with the grain, there is no pasture, or, at least, the young plants should not be eaten off. Second year, there is a good crop of timothy and clover for hay, with pasture in the fall, obtained principally from the red clover. Third year, the pasture is mostly timothy, as the clovers, being biennial plants, are nearly all dead. This leaves the ground covered with timothy to the extent of one-fifth, which yields fair pasture up to the last of June. After that time the plants become dry and woody, and they make but an indifferent growth in the fall of the year. Fourth year, there is pasture, consisting of timothy and some alsike clover, the result of self-seeding by the shelling of the clover at the time of cutting the hay two years previously, and some of the natural grasses. Fifth and following years, the same grasses come up with a greater proportion of natural grasses and white clover covering the ground. In this way, during the latter years, the pasture fields have improved by the filling in of the natural grasses, but, in the great majority of cases, the fields have been plowed up and sown to grain at the end of the third year, just when the pasture was poorest.

Permanent Pasture.—Many of our best farmers will say that to continue a field in grass for more than two or three years, shows a want of proper rotation, but I consider that it is advisable that each farm should have a portion of the land in permanent pasture. Some may contend that they cannot afford to lay their high priced land down to grass. But when we consider that in Britain, where an acre of land sells for several times the price for an acre in Ontario, and see the large acreage of land that is in permanent pasture, will it not pay to keep a portion of our comparatively low-priced land seeded in the same manner? It is estimated that England has about fourteen million acres in permanent pasture, Scotland about eight millions, and Ireland about nine millions. Most of this land has lain in pasture from time immemorial, and will rent for several times as much per acre as arable fields of a similar character lying alongside.

Good Pasture After Bush.—The old settlers tell us, and it has been generally conceded, that the pasture grown on the land just after the bush was cleared off was the best we ever had in this country. Let us consider the reason for this. In the first place the humus in the virgin soil, on the surface, had not been lost by being turned down with the plow and the more barren subsoil brought to the surface. Secondly, the fields had to lie sufficiently long in grass for the stumps to rot. This gave the natural grasses and clovers a chance to get well established, and cover the whole of the surface with a close sward which gave the stock a large amount of rich herbage. But as the country becomes more and more cleared up there are less and less of these old natural pastures, and, consequently, more of the temporary and less desirable pastures taking their place. It is a well recognized fact that old permanent pastures will fatten stock much faster than new or temporary pastures.

What Constitutes a Good Pasture?—Let us consider the requisites for a good pasture. The land should be closely covered with plants from the time of seeding, and there should be a succession of fresh grass throughout the whole season from early spring until the frost comes in the fall. Some varieties of grass have their roots spreading along the surface of the ground, and usually start to grow early in the spring and give fine pasture early in the season, but fail during the dry months of the summer. Other varieties have deep roots which go down into the subsoil and stand the dry season well. Some of them will give a green bite to stock during the driest time.

Preparation for Seeding to Grass.—Land that is seeded to pasture should be clean of weeds and full of plant food if possible. It is a good plan to seed down after a hoe crop with the best and cleanest seed that can be obtained. The land should not be plow-

ed, but worked up with a spring tooth cultivator and well harrowed to make a fine mellow seed bed. The best catch will be obtained by seeding without any grain or nurse crop, but the usual custom is to sow the seed with some kind of grain crop. It may be sown with fall wheat or rye in the early spring, just after the snow has gone off, while the ground is frozen, so that, when it thaws, the small seeds will sink into the soil and bury themselves, or a light harrow may be run over the land as soon as it is dry enough for the horses to work upon without puddling the soil. Barley or spring wheat do very well for spring nurse crops, but the amount of seed grain sown should be at least a peck per acre less than if no grass seed was sown. The small heavy seeds, such as clovers and timothy seed, should be sown from the grass seed-box, so that the seeds will fall in front of the drill. Light seeds, such as Blue grass, should be mixed with the grain upon a floor before taken to the field and the whole sown together. Then give one stroke of the harrows crossways. After harvest the young grass should not be pastured, but allowed to grow a good top. This will give you good, strong plants to go into the winter with, and serve as a mulch to protect the roots by holding the snow, and keep the ground from the alternate freezing and thawing that we are troubled with in Canada.

How to Treat a Pasture.—It will be found an advantage to cut a crop of hay the following year, so as to give the plants a good root before the stock is turned on it. After fields have been in pasture for a number of years they are apt to become what is generally termed hide-bound or run-out. This is owing to the soil becoming so full of interlaced roots that the air and rain do not readily penetrate it. The result is a short, strayed growth of grass. But it is a mistake to plow up a field of this kind if it is needed for pasture, as it can be easily renewed by putting on a sharp set of harrows and going over it several times, crossing it every alternate time. If it is desirable to introduce some other kinds of grasses into the field this will be found a very good time if the seed is sown before the last stroke of the harrow. This renewing should be done in November after the growth is over for the season. It will greatly improve the pasture if a top dressing of manure is given the field at this time. Fields that are troubled with moss will be greatly benefited by the harrowing. In Britain, where moss is much more troublesome than in this country, they apply one part of lime mixed with four parts of soil at the rate of about four wagon loads of the mixture per acre.

A Good Permanent Pasture Mixture.—The following mixture of seed will be found suitable to most places in the province: Timothy, 3 pounds; Orchard grass, 5 pounds; Kentucky blue grass, 4 pounds; Red top, 4 pounds; Alfalfa, 5 pounds; Alsike, 2 pounds; White clover, 2 pounds.

Farm Implement Department

A Canadian Inventor.

We have pleasure in placing before readers and friends one who has risen from the farm to a position of influence and prosperity in the manufacturing line in the person of Mr. David Tolton of Guelph. In his boyhood days Mr. Tolton became the possessor of a book entitled "Men who have Risen," which he read with very great interest, never dreaming, though possessing in a large measure the sterling qualities of which such men are made, that he would ever attain to his present enviable position.

Like many others who have made their mark in life, Mr. Tolton was born on a farm near the city of Guelph, on which his twin-brother Benjamin, resides to-day. Another brother who was associated with him in the business under the style of



Mr. David Tolton,

Toiton Bros., died in 1898, and who in a large measure contributed to the success which this well known firm attained to as makers of up-to-date and reliable farm machinery, and more especially that part of it connected with the harvesting of the pea crop.

Mr. David Tolton early showed a remarkable talent for mechanics and machinery. When a boy in his teens on the farm he produced a miniature saw mill which was the wonder of the neighborhood and surrounding country. This mill was placed on a small stream on the roadside opposite the farm, and was so perfect in operation and continuity of action that people came from miles to see it. The fascinating feature of his mill was that it was a model of the then country saw-mill with its upright saw working perpendicularly. At each stroke the saw would move forward ostensibly cutting off the first slab, which when cut the full length of the log the saw would stop and the log carrier was immediately set in motion driven by another water wheel back for another cut, when the saw would again start apparently to cut off another slab. This operation continued to be perpetual in its action until one day the minia-

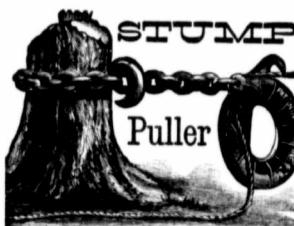
ture mill was destroyed by some unknown person throwing a large stone on the top of it.

This short description gives an idea of the inventive power and genius of which our subject was possessed. By cultivating this power and allowing it scope for development, Mr. Tolton has been able to give to the farmers of this country many useful and valuable machines which have enabled them to carry on their farming operations in a more economical and expeditious manner. This inventive genius of David Tolton and his deceased brother, perhaps reached its greatest development in the production of pea harvesting machinery. The pea harvester made by this firm, of which the former is now the head, is without doubt one of the best machines of its kind in existence, and has been of incalculable benefit to farmers in harvesting the pea crop.

Mr. Tolton has now associated with him in the firm of Tolton Bros. Messrs. Conway and Dickieson, and is therefore in a position to do excellent work for the farmers of this country by still further giving play to the inventive genius of which nature has bestowed upon him such a liberal share. We shall watch his further career in his chosen calling with a great deal of interest.

To Clear Stumpy Land.

A piece of stumpy land is about the hardest proposition that a farmer can run against. It is trying on the man and on the team which tries to work it, but more than that, it is extremely expensive, for a stump takes up a whole lot of ground, which yields no return to the farmer. Do not waste your land; get the stumps out. With the modern appliances, such as are manufactured by the Milne Manufacturing Company, of Monmouth, Ill., it is an easy matter to clear a piece of stumpy ground. Their Hawkeye's Stump Puller or their I X I Grubber will do the work to perfection and with



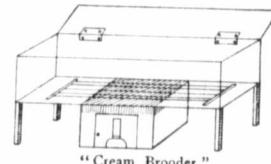
For Clearing Stumpy Land.

great ease and rapidity. The accompanying illustration shows their patent wire-rope coupler by which the chain which goes around the stump is fastened to the wire-rope, by means of which you can fasten at once to any stump

or tree standing anywhere along the line of the rope without waiting to wind up until the end of the rope is brought to the stump or tree you wish to pull. If you have a piece of stumpy ground, it will pay you to send for the Milne Catalogue. It is full of information on the subject of clearing land. Mention this paper in writing them.

"Cream Brooder."

Mr. J. A. Macdonald, Hermanville, P.E.I., sends us the accompanying sketch of a contrivance he is using for ripening cream in winter, and which he terms a "Cream Brooder." He describes its working as follows:



"Cream Brooder."

This illustration of a Cream Brooder may afford a useful suggestion to those who may have trouble in keeping cream at a proper temperature in winter. If the whole milk-room in which the cream is kept is to be kept warm it involves some increasing expense. It is always unpleasant to have the cream can kept behind the kitchen stove. It is generally in the way and must necessarily absorb much of the odors from cooking, with the result that it is next to impossible to make fine butter when the cream is thus managed. An inexpensive way to get over this trouble is the Cream Brooder here shown. Make a box wide and high enough to hold a cream pail and sufficiently long to hold all the cream pails you have. Make a cover to shut after the manner of a common writing desk. Cut a hole a foot or more square in the bottom and line the edges with tin. Stop up the hole by nailing a piece of sheet-iron over it in the bottom. Nail in a leg in each corner so as to raise it about 18 inches from the floor so as to be of the right height to put a lamp under it. If in a room where there may be strong drafts get a box without a cover and put a door in the side, set lamp inside, and put in place directly under sheet-iron bottom. Make a light rack of slats and place inside to rest pails on to keep them up from bottom of box so the air can pass under them. Any ordinary lamp can be used, but a lamp made by a tinsmith will be best. Have a good sized burner; a chimney of sheet iron is best. By regulating the flame the right degree of heat may be obtained. A little practice and a thermometer are all that is needed to get excellent results. The ripening temperature of cream will vary with the seasons, cows and kind of

cream. The temperature should be such that the cream will ripen in twenty-four hours with or without a starter. Keep all cream at a temperature of 50° until sufficient is obtained for a churning.

An Auto for Farmers

City people are not to enjoy a monopoly of the festive automobile in the future. A novel kind of "auto" is about to invade the agricultural field, where, according to its inventor, it will speedily supplant the horse for farm work, says the *New York News*. The machine referred to is the invention of William F. Crowley, of Holly, Powers County, Col., and, it is said, will do

plowing, cultivating and other appliances for farm work may be attached. A very important feature of the invention is a mechanism that allows the operator to apply the whole power to any one of the wheels, thus making it easy to get the wheels out of any rut or hole in which they may get stuck. The wheels may be operated entirely independent of each other, and by an ingenious steering device the farm "auto" can be turned within a very small compass. It is said that it will do satisfactory work on rough and hilly ground. According to the inventor, a 15 horse power machine can be operated at an expense of 75 cents a day.

A rotating plow has also been in-

of the Deering Harvester Co., of Chicago, it being a time-honored custom of this company to provide a Christmas turkey for each of its employees who is the head of a family. They are all nice, young, fat turkeys, for the purchasing agents of the company, owing to long experience, have become almost as expert in their selection of poultry as in the purchase of iron, steel, and other materials that are used in building the thousands of Deering harvesting machines that are turned out every year at the great Deering works.

Sheep Shearing Machines.

Prof. Thos. Shaw gives the following on sheep shearing machines and which



Christmas time at the Deering Harvester Works, Chicago. 9,000 turkeys for 9,000 dinners in 9,000 homes of employees of this well-known implement firm.

the work of several teams of horses. After long study and many experiments, Mr. Crowley says he has solved the problem of the substitution of mechanical power for that of horses in farm work.

The motive power for this machine may be either gasoline or electricity, although it is expected that gasoline will be more commonly used. It is adapted to plowing, cultivating, seed planting or harvesting. The engine or motor is on the forward or drive wheels, which are joined by a long reach to the smaller rear wheels, over which the seat of the driver is placed. A large transverse bar, about six feet in length, crosses the reach-bar at its centre. To this transverse bar the

vented by Mr. Crowley, to be used with the machine, which he says is a great improvement on the old plow. The plow, while it does not offer so much resistance to the earth, turns it up very thoroughly and has a trip beam attached that raises the plow point out of danger whenever a stone is struck.

A Mountain of Turkeys.

The illustration on this page is not intended to represent a South African kopje, and indeed has nothing to do with the war in Africa. It is simply a huge mountain of turkeys, a photograph of which was taken just before their distribution among the employees

we think will be found of interest to breeders:

The precise value of sheep shearing machines to the farmer has not yet been exactly determined. To the feeders of sheep at the stock yards and to ranchmen who have large bands, they are a great improvement over the old style of shearing. In the first place they do the work more cheaply. In the second place they do it more quickly, and in the third place more neatly. The number of sheep that a man should have before he should invest in a machine has not yet been determined, but more specific information on this point will soon be forthcoming.

Meanwhile the gain to ranchmen is

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considerable where their business is large enough to justify them in putting in a shearing plant. It renders them more independent of hand shearers who in recent years have sometimes been inclined to dictate wages. They knew the work must be done within a given time, or nearly so, and they knew that only skilled hands would do it well. It was their harvest time, and they did not forget to stipulate for good stiff harvest wages. Now fewer hands are wanted because of the greater dispatch with which the work is done. It should not be forgotten, however, that owing to the closeness of the clip, sheep can't be shorn so early with the machine as with the shears, as the latter leaves the wool a little longer on the body and as a result furnishes more protection for the sheep. This, of course, will apply equally on the range and on the arable farm.

But with small flocks the question of the profitableness or otherwise of machines is still held in abeyance. Arguments may be given pro and con. If one man has to furnish the power while the other man shears, the advantage in point of time saving may be disputed. But if suitable power is furnished by wind or by any other source that does not add any or much to the cost, then it is probable that even in a small flock it will be wise to invest in a small machine. Then again, the machine is liable to go out of order, that is to say, the shearing knives are. Considerable expense is sometimes entailed in renewing these. And when the shearer is inexperienced, loss from this source is likely to be greater than it would otherwise be.

Very likely the day of shearing with machines in small flocks is coming. Before long, the machines will doubtless be so improved that they will be generally used. The price will then also be moderate because of competition in making them. Our suggestion is, be not too fast nor too slow, in introducing machines into small flocks. Those who first invested in mowing and reaping machines paid rather dearly for the privilege. Those who invested later fared better.

A Complete Line of Implements.

It is claimed by some of the large manufacturers that there is a decided advantage in being able to purchase all one's machinery from the same firm, and that those manufacturers who are making a large line of machines are in a better position to please both their local agents and the individual customers than those who manufacture only one or two machines. There would certainly seem to be something in this argument, provided it is taken for granted, that the manufacturers who make the large line of machines have their machines up to date and of as good quality in all respects as those who make a smaller line.

Matthew Moody & Sons of Terrebonne, Quebec, claim that they believe

that they manufacture a more complete line of agricultural machinery than any firm in America. They necessarily do not manufacture as many of each kind of machine as some of their competitors, but the line of machinery they make is a great deal more complete, and they claim that their machines fill the bill completely in respect to their being up to date in every respect.

Their mower is of a celebrated model, and they manufacture it with 3½ ft. cut, 4½ ft., 5 ft., 6 ft. and 7 ft. cut.

Their binder has been illustrated in this journal. As will be seen from the cut it is a first-class looking machine and has given the utmost satisfaction wherever introduced. This binder is not a new experiment, but has been made in the United States and Canada for several years.

This firm are also well known for their tread power threshing machine, and they state that their trade for the season 1900 has been larger than ever before.

Having such a line of machinery they are always improving and experimenting with a view to improvements on some of their large line of machinery. They have lately adopted a special bar cylinder on their threshing machines which enables them to give a written guarantee with every threshing machine they put out that the teeth will not break from any other cause than actual wear during the lifetime of the machine, and they will replace all teeth that break from any other cause. This is a guarantee which is entirely unknown heretofore among threshing machine manufacturers.

The same firm manufacture a full circle steel hay press which is capable of pressing 1½ tons of hay per hour.

They are also commencing to manufacture a new potato digger which is capable of digging out the potatoes and leaving them on top of the ground in exceptionally good shape. This machine will do satisfactory work with two horses where the land is perfectly cultivated.

The same firm manufacture spring tooth harrows, disc harrows, broadcast seeders, rakes, reapers, circular saw machines, drag saw machines, feed cutters, sweep powers and stone and stump pullers, etc., making a very complete assortment of agricultural machinery.

It wou'd certainly seem that there would be some decided advantage at any rate to the local agent to be able to get all his machines, or practically all his machines, from one firm, and we would refer our friends to the advertisements which have already appeared in THE FARMING WORLD, to the one in this issue an^t to those which will appear latter, and in conclusion we would say that we feel that we run no risk whatever in confidently stating that the machines themselves will bear out the firm's representations in all respects, as this firm have a record of fifty years dealing in this class of goods with the farming community.

Letting Down Wire Fences.

Every farmer who uses wire fences finds that no matter how neat and firm they appear in the fall, they are found broken, tangled and useless the following spring. If the wire is a weak one, its size is usually considered the cause, and next spring the farmer buys a much heavier wire, and puts it up, with the same result the following winter. It is really the large difference in expansibility of iron under different temperatures that causes the breakage. Cold contracts all metals, while heat expands them. We make use of this in thermometers to measure heat by using mercury, which is a mineral that has the curious property of being liquid at normal temperatures, and only becomes a solid at the temperature of 40° below zero. Water freezes at zero, and this in early times was believed to be the absolute limit of cold. For a time the freezing of mercury at 40° was thought by many to be another zero. But modern science has shown that all the metals, even the hardest, can be made liquid if sufficient heat is applied, and in later years even the air elements, oxygen and hydrogen, are made into liquids by the application of sufficient cold.

But to return to iron and wire fences again. All who construct railroad lines know that allowance must be made in laying the rails because of the different temperatures they will be exposed to. If the ends are laid too close together, cold will contract them, so that there will be wide gaps between them in extremely cold weather, often causing railroad accidents from the wheels bumping against the ends and thus tearing up the tracks. In extremely hot climates the heat often causes the ends of the rails to come together and twist entirely out of shape. A hot fire beside the track will do the same thing. It is dangerous to ride through a burning forest where fallen trees burned to cinders are lying on the track.

It is always a good plan in laying wire for fencing to leave the strands rather loosely if put up in hot weather, and then taken down when cold weather comes and wound on a reel to be relaid in spring. The wires are pinned to the posts so that they can be easily removed, and it costs less to put up wires in spring when carefully preserved than to buy new ones. All farmers are used to taking down rail fences along roadways because they make bad drifts in winter. When a barbed-wire fence breaks and is blown or carried into the road it becomes a positive menace to animals and people using it as a highway, and the barbed-wire fence is largely used along highways, because it was supposed to make less trouble in winter.

There is no use in country places for fences in winter, and they should be removed as fast as can be done. We are coming more and more to the siloing system, in which cattle and horses are kept on silage and some dry fodder in winter, and, after the silage is gone, on green feed through the summer

months. We believe that the fencing in of one or two lots to be used as pasture in summer and for the exercise of stock in winter is an important adjunct to the soiling system. In a few years the dropped excrement of stock and the hair left on snow or in the ground will make these fields the richest on the farm, and they can be put under cultivation, substituting poorer fields for this use until the whole farm is brought into high condition.

The Agricultural Engineer.

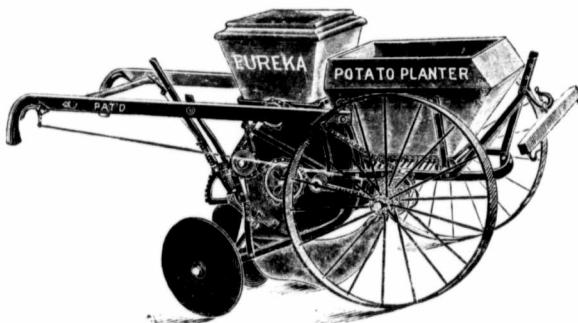
By Wm. T. Magruder.

The history of technical education in this country is the history of development by specialization and by differentiation. In the present century our engineering colleges are but repeating the same "process of natural differentiation by which the more modern faculties of the European university arose out of the primitive university."

Up to the beginning of this century all engineers were self-taught. The first two students to be granted the distinction of being called engineer were graduated in 1802 from the Military Academy at West Point. In the next twenty-five years, out of the 500 men who were graduated there, 57 were civil engineers. In 1828 the

at Stevens Institute in 1840 and at Cornell in 1855, along with a course in marine engineering. The course in chemical engineering as first laid out by the Massachusetts Institute of

of immigration to this country, gigantic strides have been made in the realm of agricultural science and development, and with this development has come the great and still growing de-



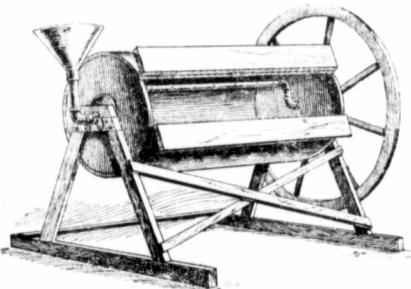
Technology is the latest differentiation—itsel a specialized course in mechanical engineering.

The mighty forces are still at work which brought about this differentiation; first from military engineering, then from civil engineering, and then from mechanical engineering. They are still potential and active, and are but following the law of supply and demand. With the demand for quick-

mand for agricultural machinery, tools and conveniences.

When the implements of the average farm consisted of a few hand tools, comparatively little general skill was required in their use, care and repair; for their manufacture but few special appliances were required, and ordinary commercial manufacturing ability sufficed to keep the price down so as to reap a goodly profit. With the introduction of the more complicated forms of farm machinery, as seen in the mower, reaper, harvester and separator, and with the keener competition between the manufacturers of rival machines, the best of engineering skill and ability has been sought and employed in the manufacture and the testing of these machines. That the price of agricultural machinery has been reduced so much in the past few years is the triumph of the mechanical engineer, whose specialty is agricultural machinery.

The popular impression is that agricultural machinery is made in the foundry and put together by boys in the snare shop, and that it is anything but accurately fitted. On the contrary, there is but little machinery manufactured on which the limits are closer. It is doubtful if even watchmaking machinery is any more accurate in proportion. A few cases will illustrate the point in detail. In the manufacture of a mowing machine the greatest allowable variation from exactness is the one-hundredth of an inch in the 30 inches between two holes in the mower shaft, and even this is considered a large allowable variation.



Concrete Cement Mixer made by A. E. Hodgett, Exeter, Ont.

Institution of Civil Engineers of Great Britain received its charter. In 1840 the Rensselaer Polytechnic Institute graduated 13 civil engineers, who were the first college graduates in civil engineering in any English-speaking country. The schools of engineering of Union, Harvard, Yale and Michigan followed within the next twelve years. In 1863 the Columbia School of Mines was founded. It was the first school in this country which recognized mining as an applied science and mining engineering as a course of study leading to a degree. In 1861 the Massachusetts Institute of Technology was incorporated and in 1868 graduated its first class, which consisted of 5 civil engineers, 1 mechanical engineer, 6 mining engineers, and 1 graduate in science. In 1868 the first degrees in mechanical engineering were conferred; 5 by the Rensselaer Polytechnic Institute, 1 by Yale, and 1 by the Massachusetts Institute. An electrical engineering course was started

er transportation by sea and by land came the canal and the railroad, and with them came the civil engineer. With the greater demand for fuels, especially for metallurgical purpose, and for the more costly metals came, hoisting and pumping engines, the smelt and the converter, and with them came the mining and metallurgical engineer. When it became necessary and possible to replace the hand pumps and horse powers of our grandfathers with the triple expansion high-duty pumping engine and the Corliss or Wilans engine of to-day, the mechanical engineer was needed to design construct and operate such complicated machinery. Similarly with the dynamo and electric motor came the electrical engineer, or mechanical engineer, whose specialty was electricity; and with the vacuum pan, gas retort and pulp mill came the chemical engineer.

Since the passage of the land grant bill of 1862 and the Morrill act of 1890, coupled with the immense tide

They were looking through the library. "If you had the divine gift what would you rather write?" asked the romantic young woman. "Checks," replied the sordid young man.

Nell—Maude is very susceptible. Belle—What's the matter with her now? Nell—Somebody told her she was a remarkably striking girl, and she immediately went and bought a punching bag.

The Farm Home

Original Shirt Waist Man.

Las' Saturday, when I'd druv in to Barber's giner'l store,
Some drummer throwed a paper down an' left it on the floor;
And the very fust thing I see when its pages
I did scan
(I got them fine words from a book) wuz,
"Lo, the shirt-waist man!"



I read it through and then I found that all this row and fuss
An' big headlines and roarin' type was just
because some cuss,
Some city jake, with 'bout the sense of Hiram
Jinnin's shoat,
Hed gone an' eat his daily grub 'thout puttin'
on his coat!

"The 'riginal shirt-waist man," they says, says they, "at last has come!"
An' I allow, fer a city dude, he showed that he wuz game,
But if the Jacob Townsend goods they really
want to see,
Just let 'em come to Plunkville town an' take
a look at ME!

—Kobley D. Stevenson, Indianapolis Press.

Are Agents or Peddlers a Benefit to Housekeepers?

About the time I wrote the article on this subject for the exhibition number of THE FARMING WORLD I sent the above question to a dozen housekeepers. I take the liberty of copying their replies for our Home Department, wishing that I might have the opinion of as many farmers on the question, "Are implement agents a benefit to the farmers?"

GENERALLY A NUISANCE.

"Are agents or peddlers a nuisance or a help? There is plenty of room for discussion. They, especially when they are girls or elderly women, excite

the compassion of kind people and cause them to purchase something not really needed, something they would never have bought in any other manner, and from which they receive no real benefit in return. The money expended with such travelling people is very seldom, if ever, circulated where it can possibly do the people or place from which it is taken any positive good. As most of their stock and necessities are purchased from foreigners, and in distant places. Few of such people are honest, while those who are adhere to that best of policies—"Ask a price which will pay three times over the freight, expenses and other fees." Of course, people have to live, and while we are helping those we are not expending our money as we might have done in many more foolish ways. But I sincerely believe that every country should support her own people of that class, then Canada's population would be increased in honesty and truth.

"When we wish to help the poor we have any number of deserving ones of our own country, whose love of independence, and hatred of beggary will not permit them to court our favor as foreigners will do. ALICE R. C."

BOTH GOOD AND BAD.

"Re agents and peddlers I should say they are both good and bad. The agent who introduces new and useful machinery is helping on the general progress, but these foreign peddlers with their cheap jewelry and shoddy clothing are an unmitigated nuisance.

"CASSANDRA."

(Why not the new and useful machinery be introduced in a cheaper and more satisfactory way than through agents?)

SHOULD WORK AS SERVANTS.

"Peddlers are not a benefit to the housekeeper or to the country either, and I am sure the female ones must suffer many hardships that they would not have to endure in many other vocations that their health and strength if not their education, fit them for. Last summer I met two Assyrian girls, one about sixteen and the other fourteen years old. The younger could not yet speak English, and the elder girl told me she was teaching her the language and the trade of peddling. They were of nice manner and disposition, apparently quite honest, but from their general appearance I do not think they were making the wage of an average servant, and yet they were traveling about the country with two heavy packs each, and seemed to have no idea that a settled occupation would be better for them. Years of such a life must harden and discourage men and women, and if their own countries are yearly raising masses of people with such useless occupations, it is little wonder that anarchy prevails.

"MAPLE LEAF."

(I we could import a few good servant girls and farm laborers, it might be beneficial, as these articles are scarce and frequently of poor quality.)

AN AMERICAN OPINION.

"In looking over the list I notice I am the only one in the States, therefore I hope to deport myself so that you may not regret my admission. As to peddlers, I must confess I do not fancy them myself, and if everybody encouraged them as little as I do, they would have to cease their vocation. When I say peddlers, I do not mean men who sell their fruit and vegetables through the streets. I think their method all right. They have raised their merchandise and people like to get it fresh each day at their doors rather than have to go to the market, but those who trudge from door to door with packs and baskets, I do not encourage. Almost without exception those who do this work in the United States are foreigners. Occasionally we have canvassers for books, and even these are considered a nuisance, though I must say they are sometimes a benefit to the tired housewife if she will take time and cease labor long enough to converse with them and forget for the moment her narrow bounds—the kitchen.

"GENTLE ANNIE."

(Neither do I condemn the sellers of fruit and vegetables and I am not sure that the farmer's wife will not some day have the daily delivery of groceries, meat, to say nothing of a daily mail, at her door. As for book agents, you mean—if she will take the time to listen to them, conversing.)

TOO MUCH BOTHER.

"No, the busy housekeeper does not want to be bothered with peddlers. If one says 'No,' they will go over their rigmarole and ask half as much again for a thing as one pays at a store, while they have a lot of trumpery that is not of any use to anyone. So I say 'banish them by not buying anything from them. Do not patronize any of them. Let them go to work.'

RAINDROP."

PEDDLERS ARE AN INJURY.

"Are peddlers an injury? I say, Yes very emphatically. They charge more than a regular dealer, and people will buy things they do not really need, thereby spending money that God has given them trust.

"First, there are those Assyrians, who have the country divided, and each one has a particular route. They go to a house, frequently finding the lady alone. If she does not want anything, they will get angry, and fly about in such a way that she gets nervous, and will buy something to get him out of the house, perhaps using money that way really needed for necessities.

"Second, take those travelling sales-

men with dry goods. They were through this part last summer, and very many people who had no use for them bought goods, giving their notes in payment, as the goods were sold in \$45 lots. They always have a smooth tongued salesman. I know one dress-maker who bought by being told and made to believe that she could make up garments out of the goods and sell them ready made. The goods could be bought at any store for twenty five cents per yard, as they were out of season goods, instead of at the rate of forty-five cents a yard. She has the goods on her hands, and had to work hard to earn the money to pay for them.

"Third, a travelling grocer called at a store here last week to buy sugar, and asked for a reduction. When he could not get a reduction, then he asked for several packages of sugar, each to contain twenty-three cents' worth of sugar. These he sold in this neighborhood at twenty five cents each. Verily, people like to be humbugged!"

CRYSTAL."

(Yea, verily, but even the worm will turn.)

HUMAN PARASITES.

"Tramps, peddlers, agents of any kind I consider a troublesome nuisance. We are near enough to town and stores to get all we want. By exercising a little forethought we need never run out of needful articles. And for book agents who will talk and waste one's time I would like some kind of electric chair that I could offer them, when I could press the button and give them one good shock, so that they would give me a wide berth in the future. Implement agents are no better. They belong, one and all, to the human parasites who live by sucking their subsistence from others.

"DAME VAN WINKLE."

(Imagine the stylish, kid-gloved agent being called a parasite! Perhaps a dusting with Persian Insect Powder or a dip in Miller's Tick Destroyer would be appropriate.)

HAVE SOME GOOD FEATURES.

"As you seem to be all down on peddlers, I will try to find a few points in their favor. A good number, as you have noticed, are foreigners, and have not got the language of the people. They have come to this land of ours to make a living, perhaps being in sore distress or under oppression in their own land, the Armenians, for example. Now the very best way to become acquainted and to gain a knowledge of a language is to go among the people who speak it. For this reason quite a number are given packs, and are sent out to sell. In a few years they leave the peddling, and go to some better paying work. Then they very often carry useful articles and sell at reasonable prices, though I have no use for those packs that are composed of cheap jewelry.

"NELLIE"

(Do you not think they take a poor method of learning the language?

They must learn very few words, and, perhaps, even those few are incorrectly pronounced. Were I to go to a foreign country and could not afford to pay for tuition in the language I should try to get a situation as servant in an educated family.)

OBJECTS TO FOREIGNERS.

"In regard to peddlers, they are all well and useful enough, with the exception of the foreigners, who overrun us with their jewellery and shop-worn goods. They take up a great deal of one's time and they have nothing worth buying. I have no objections to any of the others, but those ought to be sent to work, for, as a rule, they are strong, hear'y men." BESS."

SHOULD NOT BE ALLOWED.

"Regarding peddlers—I say they are a nuisance and should be forbidden to travel the country. They stop at every hotel, unpack their goods, place them on some piece of furniture—perhaps an old couch alive with vermin or disease germs—pack up their goods again and go to some clean, respectable house, and probably leave in it vermin or disease. The majority of peddlers are no cleaner than tramps. We live in a small country village, and I have seen as many as four of these Syrian peddlers here in one day. Living by the depot, we know them so well and consider them a nuisance to the country. There are far more of them travelling in Quebec than in Ontario. They should be compelled to go to work; it would be no harder for them than it is to carry their heavy packs from house to house.

"Another thing I do not approve of, and that is, people answering ads and sending for goods to sell in order to get a watch, a piece of silverware or some other prize. One can refuse to buy from peddlers, but one hates to refuse one's neighbors, though, as a rule, the goods sent for sale are worthless.

BUELAH."

(The time will soon come when up-to-date papers will refuse to print advertisement such as you mention; they are getting too plentiful, and, as Crystal said, "people like to be humbugged." We ought to know that either the goods sent for sale are "no good" or the premium is "no good," for no firm is going to be so crazy as to give good goods for nothing. It would be well if we remembered that we will be sold if we try to get any article for less than its value.)

KEEPS THEM OUTSIDE.

"My best answer to the question discussed is my usual mode of treatment to such, especially the foreign element. I rarely, except in very cold weather, allow them inside the door. When I do, a decided *no*, repeated as often as necessary, usually saves me any great annoyance. The no must be emphatic—once let a glimpe of indecision appear, and you are doomed to an almost endless whine, "Buy something cheap-a, cheap-a, cheap-a," until

in despair you take a thimble, a packet of needles, or something you do not need at the time. HAPPY HEART."

(When the vast majority of—voters I nearly said—I meant of the women behind the men who cast the votes, dec're pack peddlers are a nuisance, it seems strange if we must continue to tolerate this nuisance; I feel sure that a remedy can be found. If it is considered too small a matter for our Government to consider, then we must starve them out by refusing to purchase their goods or give them meals.)

Some people condemn the Government for giving our northern lands to foreigners, as Doukhobors, etc. But we would not object if all poor foreigners who wish to make a living here were compelled to go farming in the new districts. If they were given to understand that selling goods from house to house meant arrest and imprisonment with hard labor, the housekeepers would have no further reason for complaint. "A word to the wise is sufficient."

M. E. GRAHAM.

Hints by May Manton.

Woman's Evening Wrap to be Made With or Without Collar.

No wrap for evening wear is more thoroughly satisfactory than the ample cape. It slips on and off with ease. It is essentially comfortable, and it ruffles the gown as little as any garment that has ever been devised. The model illustrated combines all essential practical features. It is simple in form; it falls with sufficient ease and fullness to make fine folds, yet is



3735 Evening Wrap.
32, 34 and 40 in. Bust.

not over full; it includes a generous hood, that can be drawn over the head or allowed to fall over the shoulders, as occasion may demand; withal, it is elegant and eminently smart. The original is made of satin-faced cloth in pale turquoise blue, and is trimmed with an applique of white, outlined with a silver thread, and lined with white peau de soie; but white cloth is a favorite, while all pale colors are

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used; and still more elaborate wraps can be made from panne velour with lace applique, peau de soie, satin brocade, and lace over satin.

The cape is cut in two pieces with a seam at the centre back. The hood is simply round and full, drawn up to form a becoming frill. The neck is finished with a high storm collar, which can be omitted if desired, the hood alone making a sufficient finish.

To cut this wrap for a woman of medium size $7\frac{3}{4}$ yards of material 21 inches wide, or $3\frac{1}{2}$ yards 50 inches wide will be required.

The pattern No. 3735 is cut in three sizes: small, 32 inches; medium, 36 inches; large, 40 inches bust measurement.

The price of above pattern post-paid is only 10 cents. Send orders to "The Farming World," Confederation Life Building Toronto, giving size wanted.

A Penny Lunch

A penny lunch room was recently opened in Chicago. The average amount received for each check was $3\frac{3}{4}$ cents. Every article on the bill of fare is one cent, and for three cents a man gets a good, wholesome break fast. The projectors intend to operate twenty rooms, and expect to feed from 25,000 to 30,000 persons a day. The experimental lunch room has proved to be a great success.—*Scientific American*

Hints to Housekeepers.

To make a batter for any kind of fried dishes sift together one cupful of flour and one saltspoonful of salt. Beat the yolks of two eggs, add them to one cupful of milk, and turn the mixture over the flour, beating until the batter is smooth and light. Lastly, fold in the stiffly beaten whites of the egg. Stand on the ice until it is wanted. The colder it is the better.

An excellent way to prepare scallops for a dinner course is to drop a pint of them into boiling water, let them stand for five minutes, drain and cut fine. Add to them the yolks of four hard-boiled eggs mashed fine, two tablespoonyuls of chopped parsley, two tablespoonyuls of bread crumbs. Make a sauce of one pint of milk, two tablespoonyuls of butter and two tablespoonyuls of flour. Stir this into the mixture, pour into a buttered dish or fill scallop shells, sprinkle with buttered crumbs, and brown in a quick oven.

In making the sauce in which cold meats are to be warmed and served, it is better to let it cool after it is cooked, and heat it again before using. The cooling process permits the thorough combination of all the flavors of onion, pepper-corn, parsley, celery, soupsstock or beef extract into a delicious whole whose parts cannot be distinguished. This is one of the niceties of a French cook's method.

An easy way to perfume linen or dresses is to put a few drops of good extract on small pieces of pumice stone, which are then placed in drawers and boxes and among dresses in wardrobes.

Mushrooms sliced are a delicious filling for a sandwich.

No matter in the household requires more careful attention than the ventilating of the rooms. Especially is this true during the coldest weather, when cracks and crannies are stopped to keep out wintry gusts. In a recent detailed examination of the effects produced on the air of rooms by the use of coal gas and electric light for heating and lighting purposes, it was proved that, however the room may be lighted or heated, the best air occurs near the floor, and the most impure at the ceiling. But the quality of air in a room varies in purity according to the system of lighting or heating employed. A coal fire for heating and an electric light for lighting give, it is said, the best air; a gas fire with the same light is not so good; a coal fire and a gaslight are still worse, and a gas fire and light worse than that. The worst samples of air were obtained from an apartment in which a gas cooking stove was employed without a flue to carry off the noxious gases.

Rice is composed mainly of starch, and for this reason should accompany nitrogenous foods, such as eggs, meat, peas and beans. The proper balance is obtained in puddings by the addition of milk, butter and raisins.

French breadmakers assert that water is preferable to milk in bread mixing, because it gives a fine, firm crust. A little mashed potato added to the bread sponge will make the bread whiter and keep it moist longer.

Her Double Task

The woman with pluck to show
She can do what a man can do
May henceforth do what a woman must
And keep up the man's work too.

—*Harper's Bazaar.*

How She Got It.

"You know what Hattie Pike did. Her husband had promised her for ten years that he would build her a summer kitchen to put her cook stove in so that her dining-room needn't be so heated up by the stove. Well, he kept putting it off from year to year even after he had the material on the ground, and one day when Reuben was going to have half a dozen harvest hands Hattie got up from the breakfast

table and told Rube that she was going over to her mother's, and that she was going to stay there until he put up that summer shed-kitchen. Rube plead and almost wept, but Hattie walked off, and when the harvest hands came Rube had them all whirl in and help him, and they had that shed up and the cook stove set up in it in time for Hattie to get dinner in it. It's a good thing to let the men know once in a while just how dependent they are on us women."—J. L. Harbour, in the *Household*.

A Boy's Letter.

This is a genuine letter from a lad at school. After complaining generally of the school, the young gentleman says:

"I hope Matilda's cold is better. I am glad she is not at shule. I think i have got consumption. The boys at this place are not gentlemanly, but of course you did not no this when you sent me here. I will try not to get bad habits. The pants have worn out at the knees. I think the tailor must have cheated you, the buttons have come off and they are loose behind. I don't think the food is good, but i shd not mind it if i was only stronger. The piece of meat I send you is off the beef we had on Sunday, but on other days it is more stringy. There are black beetles in the kitchen, and sometimes they cook them in the dinner, which cant be holesome when you are not strong. I have a tame beetle as a pet. Do not mind my being so uncomfortable, as i do not think i shall last long. Please send me some more money, as i o 25 cents. If you cant spare it i think i can borrow it of a boy who is going to leave at the half quarter, but perhaps you would not like to be under an obligation to his parents. Yr loving but retched son."

—*Current Literature.*

The Husbandman.

By Arthur Stringer

"He gnawed a crust, and flung his goodly wheat
Full wide across earth's leagues of hungry loam,
Waiting the reaper; ye who drink and eat
Amid our dead, what harvest take ye home?"

—*Ainslee's Magazine.*

When disappointment fills your cup, don't be in haste to drink it up, just wait a bit, the truth I speak, all cups are prone to spring a leak.—*Indianapolis Journal.*

A Sprayer

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\$2.00

Mechanically perfect in construction.
Does the work as well as more expensive ones.
Will cover tallest fruit trees.
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A PAPER FOR FARMERS AND STOCKMEN.

Publisher, D. T. MCAINSH.
Editor, J. W. WHEATON, B.A.

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Business Notes.

For wind mills and pumping machinery see Goold, Shapley & Muir advertisement, page 735.

U. S. Specialty, Adelaide St., has one of the best paying articles for agents in the steam cooker advertised on page 734.

A full line of fruit and ornamental trees for spring, 1901, at the lowest possible prices can be had by writing Winona Nursery. Correspondence solicited. Advertisement on page 706.

Speculators of farm property will find an opportunity to turn money fast in New England farms. Write to O. B. Sargeant, Farm Agency, Canaan, N.H., for full particulars and catalogue.

The wrought iron wide tire wheel made by the Dominion Wrought Iron Co., is just what the farmers want for soft ground to carry heavy loads. The load can be doubled. Write for particulars. Advertisement on page 706.

Champion Evaporator for maple syrup and sugar, manufactured by the Grimm Mfg. Co., Montreal, is no doubt the best machine on market for the purpose. The number being sold is a guarantee. See advertisement page, 734.

The flexible harrow manufactured by the Tolton Bros., Guelph, is guaranteed by them to have more than double the strength and wear of any other make. Their motto is not how cheap, but how good. Advertisement on page 735.

Mr. Gillespie, of the Vessot Co., is being encouraged with the sale of their goods in Ontario. Beautiful show-room, where the Joliette grinders are set up at 108 Front St. E., Toronto, for the convenience of the public. Ad. on page 735.

The Ontario Government have erected at Guelph a large building for the purpose of giving the farmers an opportunity of exhibiting selected cattle and hogs. After being killed are hoisted by machinery on two rails and then carried to a Wilson's hog scale and the weight is registered. The complete outfit of machinery and scales is furnished by C. Wilson & Son, of the Toronto Scale Works. Page 706.

Among the seed men advertising this week will be found on page 727, the Robt. Evans Seed Co., Limited, of Hamilton. Their catalogue for 1901 is a beauty and a harbinger of the spring time and, every farmer should give attention to that important part of his farm and garden. This catalogue contains a fund of practical information on all kinds of seeds, seeding appliances, garden tools, &c., and will prove of value to all tillers of the soil. Secure their price list.

QUESTIONS AND ANSWERS

Importing Nursery Stock.

A. G. A., Port Dover, Ont., writes: "Will you kindly inform me through your columns of the Act regulating the importation and fumigation of trees imported from the United States: if the time for importing is nearly closed. Please advise me as soon as at all convenient."

At Ottawa, on January 5, 1901, an Order-in-Council was passed making provision for the importation of nursery stock from any country or state to which the San Jose Scale Act applies, to be entered at the Customs ports of St. John, N.B., St. John, Que., Niagara Falls and Windsor, Ont., and Winnipeg, Manitoba, between the following dates in each year: 15th March to 15th May in the spring, and 7th October to 7th December, in the autumn; and at Vancouver, British Columbia, during the winter months only from 15th October to 15th March, at which ports they will be thoroughly fumigated with hydrocyanic acid gas by a competent Government official in accordance with the most approved methods.

All shipments made in accordance with the above will be entirely at the risk of the shippers or consignees, the Government assuming no risks whatever.

Packages must be addressed so as to enter Canada at one of the above named ports of entry, and the route by which they will be shipped must be clearly stated upon each package.

As it is well known that well matured and thoroughly dormant nursery stock may be safely treated, but that there is danger of serious injury to the trees if fumigated in the autumn before the buds are thoroughly dormant, or in the spring after the buds have begun to unfold, all stock which when received is immature or too far advanced for safe treatment will be refused entry and held at the risk of the shipper.

Glasgow Stallion Show.

The 41st show of this society was held at the new show grounds at Scotstoun, Glasgow, Wednesday, February 6. The horses had to be shown the previous day to the representatives of the various societies who were there to make selections. The day was very cold and disagreeable and the attendance suffered in consequence. There were 125 entries and 75 horses shown. The horses competing for the premiums have to serve mares the coming season in the Glasgow district, and this restricts the entries as the first prize, \$400, is not as large as many other societies now offer by way of premiums.

In the aged class 22 horses competed and the winner was Casabianca (10523), by Baron's Pride (9122), out of Garthland Queen (13413). He is

owned by Mr. John Crawford. Casabianca is a big massive horse rising 5 years old. Two years ago he won as a three year old, and was a champion at the summer show. In the three year old class here, Mr. A. B. Matthews of Newton Stewart, won with Labori (10791). He is a very fine bay horse with good legs and feet. This goes without saying, as nothing can win at Glasgow unless both feet and legs are good, but Labori shows extra good quality. He is short coupled, a bit chunky. He is by Hiawatha (10067), the winner of the open class at this show and also winner of the Cawdor cup which he has now won in 1898, 1899 and 1901. He was bred by Wm. Hunter Stranraer, Wigtonshire and is owned by John Pollock, Langside. He is now nine years old, and as he has been a show horse all his life he must have fine quality to continue so long. He had a hard contest for first place this time, being hardly pressed by his son Marcellus (11110), rising three years old, winner of first place in the open class for three-year-olds. This promises to be a better horse than his sire, and certainly good judges say a better three-year-old, but it may be that before he comes to the age of Hiawatha he may show signs of wear.

In the colts rising two, Walter S. Park, Bishopston, was first with Lord Donaldson (1094), owned by James Kilpatrick, Kilmarnock, a well made dark legged colt with white blaze on his face, and superb pasterns. The old horse Hiawatha and his two sons made a fine trio in the showing. Regarding the outside engagements made, only seven are tabulated as being made at this show. This is quite different from former years. Now the societies choose their horses earlier and a list of over 70 is given of the best horses in Scotland hired for 1901 to different farmers' clubs. Over half of these are from the stables of A. & W. Montgomery, Netherhall, Castle Douglas.

Nova Scotia Waking Up.

At last the Government of Nova Scotia seems to be aroused to the necessity of doing more aggressive work for the development of agriculture in that province. In the Legislature last week Premier Murray submitted these measures in this direction, which are: "An Act to Encourage Dairying in Nova Scotia," "An Act to Encourage Horticulture," and "An Act respecting the Nova Scotia Herd Book."

The bill to further encourage dairying in Nova Scotia aims to put Nova Scotia in line with the great dairy countries of Europe, such as Denmark and Scotland, where butter making is highly developed. Premier Murray's measure provides for an annual appropriation of \$7,000 for the encouraging of dairying in Nova Scotia. Schools for special instruction of dairying will be provided. Provision is also made for assisting to equip and provide with plant and machinery any creamery

proposed to be established that will annually for five years manufacture not less than 20,000 pounds of butter or 40,000 pounds of cheese.

By way of encouraging horticulture it is proposed to establish experimental orchards in the various counties of the province adapted to fruit growing. The plan, in brief, provides that the Government shall purchase sufficient first-class nursery stock to plant not more than six acres of orchard in each county of the province. In establishing these model orchards the Government aims to give an object-lesson which the fruit growers of the locality may copy with profit. In connection with the establishment of each model orchard a plot of wornout land will be selected as an object-lesson in restoring the fertility of the soil without stable manure, by the use of clover, bone meal, etc.

The third bill is for the purpose of raising the standard of live stock. Nova Scotians can register cattle in the herd book of the province, but if the standard is not equal to that of Ontario this measure will enable the Government to dispose of the present herd book and to affiliate with the Ontario Association.

Big Thoroughbred Horse Sale.

Low Prices and Great Bargains the Rule.

The big sale of thoroughbred horses at Grand's on Tuesday last was not characterized by big prices. Mr. W. H. Smith, proprietor of Grand's, is to be commended for keeping faith with the public in all the sales he conducts. On last week's sale he was out of pocket to the extent of about \$1,000, and yet every animal put up was sold for what it would bring, without any reserve whatever. Parties desiring to secure horses should remember this fact.

One of the disappointments of the sale was the imported stallion, Sentinel, sent out from England by Major Dent as an experiment to test the desire of Ontario farmers to engage in producing horses for army purposes. This animal was specially selected by Major Dent as being suitable for the getting of stock for army purposes, and cost laid down in Toronto about \$1,000. But, strange to say, he sold for only \$280 to go to British Columbia; Ontario farmers seemingly not being anxious to take up this work. With one or two exceptions, all the stallions sold to buyers outside of the province. This is to be regretted, as many of them were suitable for breeding horses suitable for military purposes. Mr. E. B. Webster, of British Columbia, was the chief buyer, and secured the imported Sentinel, Homecrest and the noted stallion Foam. About 65 horses in all were sold, the general purpose and ordinary drivers averaging \$90 each, while the thoroughbreds averaged only from \$52 to \$77 each.

The following is a complete list of the thoroughbred sold, with prices.

Property of W. H. Smith—Imp. Sentinel, br.b., 9, by Hawkeye—Jennie Howlett, E. B. Webster, British Columbia, \$280.

Property of F. M. Ware—Homecrest, ch.h., 4, by Cheviot—Carmen, E. B. Webster, British Columbia, \$2c0.

Property of Joseph Duggan, Toronto—Foam, ch.s., 11, by Ocean Wave—Zoomy, E. B. Webster, British Columbia, \$150.

Astrology, ch.m., 6, by Jack of Diamonds

—Astronomy, O. Spears, Galt, \$60.

Maple C., ch.m., 5, by Two Lips, J. Weatherell, Galt, \$35.

Game, br.g., 2, by The Chicken—Queen

Bess, J. Remington, Toronto, \$30.

Armeda II., ch.m., 6, by Foam—Queea

Bess, J. R. Lee, Toronto, \$102.50.

Sea Song, ch.f., 3, by Fcam—Astronomy,

W. Sharp, \$65.

Total (six head), \$462.50.

Average, per head, \$77.

Property of N. Dymont, Barrie—The Skipper, b.f., 2, by Stilton—Allie D., William Garbutt, Thistletown, \$32.50.

Yorkshire Lass, b.f., 2, by MacLeod—

Yorkshire Rose, T. White, Almonte, \$27.50.

Ladysmith, blk.f., 2, by Imp. Certainty—

Lady Leontine, T. E. Brandon, Toronto, \$36.

Oceania, b.c., by Imp. Certainty—Parthenia, T. E. Brandon, \$35.

Pocketpicker, b.g., 3, by Pickpocket—New

Dance, T. White, Almonte, \$50.

Cleopatra, ch.f., 3, by Imp. Canny Boy—

Imp. Hyala, Wm. Sinclair, Toronto, \$75.

Matlock, br.g., 4, by Imp. Courtown—

Lady Janet, C. Phair, Toronto, \$55.

Vint, br.f., 4, by Imp. Superior—Rosalie,

Dr. Warren, Toronto, \$67.50.

Maritara II., br.m., 6, by Imp. Courtown

—Annie D., Jas. Kelly, Stratford, \$55.

Parthenia, br.m., 6, by Imp. Kyle Daly—

Wanda III., A. Kent, Oakville, \$77.50

Anne D., br.m., 14, by Terror—Rosabelle,

James Kelly, Stratford, \$40.

Imp. Minnie Lightfoot, by Oddfellow—

Lighthearth, M. Hutchinson, Toronto, \$47.50.

Edith C., ch.m., by King Bob—Jessamine

Porter, Mr. Warren, Toronto, \$40.

Imp. Superior, br.b., 9, by Chippendale—

Olton, \$100.

Total (14 head), \$738.50.

Average, \$52.

Property of R. Davies—Adagio, 4, b.g., by

Admiral—Andante, R. Young, Toronto,

\$42.50.

Seeding Lawns and Permanent Pastures.

Press Bulletin.

Many inquiries are received at the Ohio Experimental Station for information respecting the best grasses for lawns and permanent pastures and for instructions in seeding. The Station has successfully established several lawns by the following method: As soon as the ground is dry enough to work in the spring it is plowed and pulverized by harrowing and cross harrowing until in the condition of a garden. Unless the soil is very rich it should be made so, either by the liberal use of manure or of complete fertilizer, the latter being preferable because of the seeds of weeds and coarse grasses usually carried in manure. For lawn purposes the fertilizer should carry 4 to 6 per cent. nitrogen, 8 to 10 per cent. phosphoric acid and 6 to 8 per cent. potash, and should be used at the rate of 600 to 800 pounds per acre.

A mixture of equal weights of Kentucky Blue Grass and Red Top, with a pound of white clover seed to a bushel of the mixture, is then sown broadcast, at the rate of two or more bushels per acre of the mixed seed, and harrowed in with a fine toothed harrow. If the

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CANADIAN

Military Tournament

and

HORSE SHOW

Toronto Armories

April 24, 25, 26, 27

Entries close Thursday, April 11th and should be addressed to

HENRY WADE, Secretary
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Chairman Manager

ground should be very dry it may be rolled as part of the preparation for sowing, but the finishing touch should always be given with a smoothing harrow, or other fine toothed harrow, as this leaves the surface in such condition as not to be so liable to be injuriously packed by rain as if finished with a roller.

The reason for mixing the Kentucky Blue Grass with Red Top is that the two grasses mature at different seasons, the Red Top reaching maturity some weeks later than the Blue Grass, thus keeping up a better succession through the season, while the Blue Grass is better adapted to the dryer and the Red Top to the moister portions of the land. The clover is not only useful in thickening the sod, but by its ability to gather nitrogen it assists the growth of grasses with which it is sown.

For permanent pastures no better grasses have been found in the Ohio Station than the varieties above recommended for lawns. Sown together they give a succession throughout the season and adapt themselves to differences in soil, thus giving much better results than if either be sown alone. The seed of these grasses is relatively expensive, however, and it is more economical to reduce the quantity of seed of these varieties and substitute a moderate quantity of Red Clover and Timothy seed. The first year after seeding the crop may be chiefly clover, and should be mown for hay. The second year it will be chiefly Timothy, and after that the Timothy will gradually disappear and the pasture grasses take its place. By this method of seeding not only will the first cost be reduced, but the clover will serve a most useful purpose in preparing the way for the grasses which are to follow. A mixture of equal weights of clover

and timothy, sown at the rate of a bushel to 6 or 8 acres, and cross sown with half a bushel to a bushel to the acre of mixed Blue Grass and Red Top, the whole harrowed in together, will make a fair seeding. In the case of pastures, as well as of lawns, the land should be manured or fertilized if not already rich, and here manure is the better material, if it can be obtained.

All old pastures or lawns should have an occasional dressing of manure or fertilizer. The object lesson in the scattered cattle dropping on the pastures demonstrate this point effectively. Such treatment will often thicken up the grass in an old lawn without reseeding, but if bare spots have made their appearance it will sometimes assist matters to apply a dressing of air slacked lime, at the rate of a bushel to the square rod, work it into the surface with a sharp harrow, and after a few weeks re-seed as for a new lawn.

Spavins.

In old books on farriery there are three kinds of spavin described—bone spavin, bog spavin and blood spavin.

Bone spavin is the most serious, because it is a diseased condition of the bones which compose the hock joint, the most important joint in the body of the horse, for its soundness governs the propelling power of locomotion.

Bog spavin is a pursey or sac like condition of the inside of the hock joint, soft to the touch. Being an infiltration of the watery constituent of the blood between the membranes which enter into the structure of the joint, it may be termed dropsy of the hock joint.

Blood spavin is an enlargement of the vena saphena, the vein of the leg which can be traced down the inside of the leg.

Violent strains, blows and injuries give rise to these troubles, and horses with upright hind legs are more prone to the latter two troubles than the better formed ones.

Bone spavin is a deposit of bone matter on the bones of the hock joint, the result of inflammation. The ligament that binds the bones together to form proper joint is often implicated, and, as a result, the inflammation becomes changed into bony matter. Further, inflammation is sometimes so severe that the articulations of the bones become diseased also and fused together.

Sometimes there is a bold, enlarged condition of the inside of the hock composed of firm, bony matter that has been deposited. This is termed a jack or bone spavin. At other times the hock shows only slight enlargement, spreading over the joint, or a knot of bone may be left on the upper or lower set of bones, and at times there is little to be felt or noticed by the eye, yet there is pronounced lameness. It does not follow that the large spavin causes the most pain and consequent lameness. It is the young

spavin that gives the most annoyance to the owner, for there is excessive lameness, the animal hopping out of his stall on three legs, and there is no sign to designate the seat of the trouble except to the doctor.

The treatment of all three kinds of spavin varies, so that a doctor should be put in charge at once, because after a bone spavin has formed it is too late for treatment.

In the early stage hot fomentation, followed by iodine dressings, is proper. When a case has been allowed to develop the biniodide of mercury ointment should be rubbed well in over the spavin and repeated three times, a week apart.

When a fully-developed case exists it is better left alone, for it is said by horsemen, "once a spavin, always a spavin."

Proper shoeing will assist in treatment. Have the heels of the hind shoes elevated so as to prevent a strain on the hock joint. Let the patient have a box stall always.—*Baltimore Sun.*

Balanced Rations for Stock.

The following is an account of the experience of two brothers living in the State of New York. Their experience may be helpful to some of our Farmers' Institute members:

David and John lived on the outskirts of a village, but on the opposite sides thereof. One Saturday morning there was an auction sale in town, and among the things sold were several fine milch cows, of no particular breed. David and John each bought two cows. These cows were "fresh;" that is, they had been giving milk for about one month. Each cow gave an average of twenty-five to thirty pounds of milk a day. Each man intended to buy feed for his cows and sell the milk to the village people. These cows were to be used as machines with which to convert raw material, as grain and coarse fodder, into the manufactured product, milk. About two months later we heard that David had sold his two cows to John. He complained that they had steadily fallen off in milk since he bought them, until each cow gave scarcely fourteen pounds a day. Here was a difference of sixteen pounds, or over half, in three months. What was the reason?

It at once occurred to us that John must have given his cows better care than David. We went to each man and asked him how he had fed his cows. David said he had given each cow a small armful of timothy hay and three or four quarts of corn meal each morning and night. This would be about twenty pounds of hay and ten of meal each day. He did not think it was necessary to feed his cows any particular kinds of food in order to get the most milk from them. Anything the cows would eat was good enough, if it only filled their stomachs and satisfied their hunger.

John said that he gave each of his



cows a daily ration of about twenty pounds of clover hay, three pounds of wheat bran and six pounds of ground oats. He believed that a cow needs variety in what she eats, as well as a man; and that he tried always to give his cows an occasional relish of carrots, turnips, and small potatoes, or even apple parings from the kitchen. "Of course," said John, "a cow can live and give milk if kept on the same feed day after day; but I have always found that she is grateful for a little personal attention, and will pay for it with a larger yield of milk." David had been paying \$6 a month for the food of each of his cows, actually more than the milk was selling for; John's ration cost him \$5 a month per cow, yet he was getting double the amount of milk David did, and was making money. David was disappointed; John was well pleased. But the chief reason for John's success was not because he gave his cows a greater variety of food than David, but because he fed them those foods which are well suited for the production of milk. David gave his cows a liberal allowance of hay and corn meal. These are both good foods for making fat, but are not rich in those materials which a cow needs in order to increase her flow of milk. They are better for fattening steers than for feeding to milch cows. In other words, John had been feeding a balanced ration, and David an unbalanced ration.

"There's no use o' tryin' to explain it," said Farmer Corntassel.

"Tryin' to explain what?" inquired his wife.

"The way boys 'll spend the whole day climbin' trees to rob birds' nests, n' go to sleep before happast ten in the mornin' ef you send 'em out to collect a few hens' eggs."—*Washington Star.*

PURE-BRED STOCK

NOTES AND NEWS FROM THE BREEDERS

These columns are set apart exclusively for the use of breeders of pure-bred stock and poultry. Any information as to importations made, the sale and purchase of stock and the condition of herds and flocks that is not in the nature of an advertisement, will be welcomed. Our desire is to make this the medium for conveying information as to the transfer of pure-bred animals and the condition of live stock throughout the country. The co-operation of all breeders is earnestly solicited in making this department as useful and as interesting as possible. The editor reserves the right to eliminate any matter that he may consider better suited to our advertising columns.

Horses.

In reply to a question in the House of Commons recently, Lord Stanley stated that the total number of horses and colts purchased for the purposes of the South African war between October, 1899, and January 31, 1901, was as follows: In Great Britain and Ireland, 35,775 horses and 3,827 colts; in other countries, 35,314 horses and 35,516 colts. Of the former, about 87 per cent. were sent to South Africa. The English and Irish were considered the best, and the next best were the American and Canadian. Whilst the purchases were going on it was not considered desirable to state the cost. During 1900 7,000 horses were purchased in Hungary, 21,000 in America and the United States, 3,750 in Canada, and 6,178 in Ireland. Of those purchased in Ireland 20 per cent. were for units at home.

Cattle.

Thos. Allin & Bros., Oshawa, Ont., write: "Our Shorthorn bull, Grand Sweep's stock is much in demand. A heifer sired by him, when two years old sold for \$400. We have sold about \$2,000 worth of stock sired by him. Grand Sweep's number is 64121 and he was imported by Arthur Johnston, Greenwood, Ont."

The following is a summary of the records received for advanced registry by the American Holstein-Friesian Association for Feb. 1901:

Twelve full age cows average 7 years, 1 month, 25 days, 27 days after calving: Milk 430 lbs., butter fat 80 per cent., fat 17 lbs. 12.4 oz., equivalent 85.7 per cent., fat 16 lbs. 9.4 oz. Six four-year-olds average 4 years, 6 months, 27 days, 19 days after calving: Milk 448.5 lbs., butter fat 16.041 lbs., equivalent butter 80 per cent., fat 21 lbs. 2.8 oz., equivalent 85.7 per cent., fat 19 lbs. 12.3 oz. Eight three-year-olds average 3 years, 5 months, 20 days, 27 days after calving: Milk 373 lbs., butter fat 14.71 lbs., equivalent butter 80 per cent., fat 15 lbs. 9.4 oz., equivalent 85.7 per cent., fat 14 lbs. 8.8 oz. Ten, classed as two-year-olds, average 2 years, 3 months, 3 days, 41 days after calving: Milk 314.9 lbs., butter fat 10.020 lbs., equivalent 80 per cent., fat 12 lbs. 8.4 oz., equivalent 85.7 per cent., fat 11 lbs. 11 oz.

Dairymen in the United States are taking increased interest in French Canadian cattle. A meeting of breeders who make a specialty of these cattle, as reported by the New York Farmer, was held in Oneonta, N.Y., on Feb. 14th, and preparations were made to establish a French Canadian cattle herd book in the United States. Mr. Charles E. Colburn, proprietor of the Hillsdale Stock Farm, Portlandville, Oneida county, N.Y., is a successful breeder of this line of stock. In 1900 his sales totaled over \$3,000, and his stock shown at fairs won him \$1,600 in premiums. He exhibited in all the leading fairs in New York, New Jersey and Pennsylvania, and a herd has been entered in Class A at the Pan-American Exposition in Buffalo, in the model dairy test commencing next May. Mr. Colburn has 79 head in his herd — Farm, Field and Fireside.

The Board of Agriculture has been furnished by the corresponding department of the United States with a copy of the American regulations for tuberculin test. The test is imposed upon all cattle over six months old, either in Great Britain by an inspector of the United States Department stationed in London, or at the port of entry. It does not, however, relieve exported animals for quarantine. The latest available statistics show that British breeding stock was being bought in the United States

in increasing numbers. In 1896 our export thither was only 14 head of beasts, in the following year it was 57 head, and in 1898 it rose to 342. The corresponding values were £310, £3,016, and £10,145. From Canada there is a large export of cattle of other quality across the United States border, and if English stock be sent by way of Canada to a Yankee buyer tests made by the Canadian superintendent of quarantine will be accepted. The testing official in London is Dr. T. A. Geddes, at 12, St. Helen's Place, Bishopsgate Street, E.C.—Mark Lane Express.

Mr. Joseph McMillan, Shakespeare, Ont., has had several years' experience with Shorthorns, and has sold some very fine animals. At present Mr. McMillan has a herd of fourteen head, and only a short time ago disposed of a number, which were shipped to British Columbia. Five of his calves, nearing three months of age, are very promising animals.

When the yards of Mr. James Crerar, North Easthope, were reached, a climax had been reached. It is impossible to get beyond the quality of Mr. Crerar's cattle in this country, and as their owner understands how and what to feed, his herd is unexcelled. About twenty-five pure-bred cattle compose his herd at present, which being the product of forty years' careful importing, breeding and feeding well deserve the title of being the best herd in the country. Captain May Fly, the present sire in this yard, is a three-year-old imported bull, and weighs twenty-two hundred pounds in ordinary breeding condition. Red Ruby is the oldest female of the herd. She won third prize at London last fall, and now is mother of a promising red calf. Bol'echin Gem, is an imported three-year-old cow. This animal took second prize in Toronto and first in London last fall and now has a red heifer calf, which Mr. Crerar prizes more than anything he has yet raised. His two-year-old imported cow is the pick of the flock and has already nursed a calf which won fifth place at Toronto and third at London last fall out of a class of thirty.—Stratford Herald.

Sheep.

The Stratford Herald in a write-up of Mr. John Kelly's flock of pure-bred sheep says:

"At the present time, this feeder has over seventy pure-bred sheep exclusive of this season's lambs, most of which are the Leicester breed. The balance, about eighteen in number, are Hampshire Downs. Owing to his practice of keeping till death his animals which have been winners against all comers, Mr. Kelly has an interesting collection of sheep from eight to eleven years of age. Among these might be noted, a pair of aged Hampshire ewes, and one ram, a few Leicesters, and one ram eight years old. The Hampshire Downs are of Lord Rothchild's stock, while the last mentioned ram was bred by the Hon. A. J. Balfour, and imported by Mr. Kelly at a cost of three hundred and eighteen dollars and fifty cents, exclusive of incidental costs in securing him. Besides other honors this sheep has won all over America, he won the first prize at the Royal Fair, England, and the Sweepstakes at the World's Fair in Chicago. Mr. Kelly carried home with him every honor for American bred sheep, but one, from the World's Fair. This was for a two year old ewe, for which he did not compete. Without enumerating any successes at the Canadian exhibitions we will conclude by giving an idea of how many prize winners he is fitting at present for the great exhibitions of the coming year: Eight rams, including the aged Hampshire and Leicester rams mentioned above, two three-year-old Leicester rams and four others of fewer years. His pen of ewes which are



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Five years old. No. 2899. Canadian bred, from imported stock. Also a number of SHETLAND PONIES. Terms reasonable. Apply to

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 1 Stallion, 6 years old; 1 Stallion, 2 years old; 3 Yearling, entire, 9 brood mares in foal to good sires. Also several fillies and a few young Shorthorns. Farms a quarter of a mile from Burlington. Station on G.T.R.

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Sell from \$10.00 to \$45.00. Made of boiler steel. No flues to rust or leak. Can't blow up. Guaranteed to last 10 years. Will boil 100 lbs. of meat in hot water in stock tanks 200 feet away. Will heat dairy rooms, bat houses and places nailed tree.

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SILVER WYANDOTTES
EGGS FOR SALE
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Black Minorcas.
Winners at the leading exhibitions.
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BARRED PLYMOUTH ROCKS
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Pens mated for pullet and cockerel breeding.
Eggs \$2 per setting.
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POULTRY YARDS

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Barred Rocks exclusively.
A few choice cockerels for sale.
Eggs from prize-winning stock.
Correspondence invited.

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Chicks, newly hatched, each 25 cts.
Breeding and Laying Stock at special quotations.
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Barred Rock Cockerels,
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Rosecomb Black Minorcas
Cockerels and Pulletts. Also
English Pheasants.

Pheasants' Eggs, \$3 per 13. Other fowl, \$1 per 13.

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Oakwood Farm, Galt, Ont.

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95 PER CENT. batches are often reported by those who use these Incubators. One reason for this record is absolute uniformity of temperature in egg chamber. Correct instructions for operating; has fire-proof lamp. A great mistake it would be to purchase an incubator or Brooder without first getting a copy of our 168-page catalogue. Send 6 cents for Illustrated Catalogue of Incubator, Brooder, Poultry and Poultry Supplies. The Poulter's Guide, New Edition, 15c.

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being fitted is composed of sixteen of different ages. Mr. Kelly is a great source of information regarding sheep and it is easily seen that no other occupation would afford him the same genuine pleasure, that the life of a shepherd does."

Swine

The annual meeting of the American Tamworth Swine Record Association was held at Flint, Mich., on Feb. 19. Up to date 750 animals have been recorded. The Canadian representatives on the board of direction are John Fulton, Jr., Beaconsfield, Ont.; Robt. McDole, Walton, Ont.; H. D. Smith, Compston, Que.; and J. A. Macdonald, Hermanville, P.E.I.

First Automobile—Those obsolete expressions are very amusing. Second Automobile—Yes; there's that one about putting the cart before the horse. What in the world do you suppose that means?

Mrs. Kindart—Your twins are fine boys. But they look so much alike I don't see how you can tell them apart. Mrs. Cassidy—Faith, that's aisy enough. Wan o' thim is called Pat, an' th' other wan Mike. There's the difference, d'y'e mind?

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We are willing to give farmers any information they can in reference to their poultry, and all letters will be willingly answered. Address—

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J. M. WILSON, Manager.
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Offer Eggs at \$2.00 per setting from the following varieties: Light Brahma, Barred and White Rocks, Golden and Buff Wyandottes, Silver Spangled and Golden Penciled Hamburgs, White and Buff Leghorns, Golden Sebrights, Barred and White Crested Hilk. Poults. Poultry Notes in FARMING WORLD of March 12, description n. above.

J. J. PICKARD, Secretary.

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Selected matings from noted breeders in the United States and Canada, including A. C. HAWKINS, Lancaster, Mass. Prices, \$1.00 and \$1.50 per setting. Liberal reduction on incubator lots.

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FOR SALE.

SIX PURE-BRED AYRSHIRE BULLS coming 1 year old, fit for service, and one coming 2 years old next August. All sired by "White Prince" (Imp.) except the one coming 2 years-old. As I am about renting my farm these bulls will be sold cheap if taken at once. Also a number of fine purebred Yorkshire Sows from one to four years old.

JOHN H. DOUGLAS,
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Ayrshire Cattle, Yorkshire and Berkshire Swine, Rough-Coated Collies.

3 Choice young Bulls by the noted bull "Matchless," 2 by "W. W. Earl," Imp. A few choice young Yorkshire Boars and Sows, also young Sows to farrow in April, a litter of pups now ready by "Roseneath" and out of "Perfection's Queen Imp." Write for prices.

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Fit to head any herd. For particulars, apply to—

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Boars fit for service. Sows ready to breed. Sows safe in pig. All stock of the large lengthy smooth type, and registered. Correspondence Solicited.

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FREE

Hints for Poultrymen.

Chicken lice are not like Bluebirds. They don't go South on a pleasure trip in winter; you don't see quite so many of them, perhaps, because they keep closer quarters and hug the hens a little tighter, but they are there and must be looked after or will make trouble in the camp when hatching time comes 'round.

Cinders or "clinkers" from a blacksmith's forge are valuable for poultry. Break them with a hammer into pieces not larger than a pea, and sift them, putting the siftings into the dust box and the rest where the fowls may get them at any time. It not only serves as grit, but is a great tonic, and will keep the fowls in good health.

Poultry keeping is a money making business if run on business principles and with up-to-date methods. It is a business in which little details must be carefully looked after. Don't trust to Luck or you may get left, which certainly would not be right. Pluck and Perseverance are much more reliable helpers.

There is nothing like keeping hens busy if you want eggs. Give them plenty of good loose litter, such as cut straw or chaff. Dry forest leaves are the best for they are always loose. Throw some millet seed, wheat or small grain into it several times a day; stir it in and let them work for it. The hens that will not scratch will not be of much account as layers. Idleness leads to feather pulling and other bad habits.

Patient—C-can you c-cure st st-stam-m-ering?

Physician—Yes, sir. Do you wish to take the full course of treatment?

Patient—N-n no. I j-j just w-w-want to learn to s-s-say ch ch cc chrys-an-the-th-e-m-m-mum-mum so I can tell the florist what I w-want before the ch ch—the flowers w-w-wither.—Baltimore American.

Old Lady—My good man, are you a Christian?

Tramp—Well, lady, nobody could ever accuse me of havin' worked on Sunday.

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Two choice bulls about a year old

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Rockwood, Ont.

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Also a few Heifers

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Four **Bulls**, eleven months old, and a few **Heifers** for sale. All eligible for registration in American Herd Book.

Also 25 **Yearling Grade Rams**, and 6 registered **Cotswold Lambs**.

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Offer for sale 14 young bulls, and cows and heifers of all ages, of the most approved breeding, bred to (imp.) Diamond Jubilee—28861—, at head of herd. Farm one mile north of town.

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11 Imported Bulls and Bull Calves.

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1 Bull, 11 months, Color Red.
1 Bull, 12 months, Color Red.
1 Bull, 10 months, Color Red.
All Shorthorns.

These Registered bulls were sired by King and Sweep, an imported bull and half brother to the noted British Statesman. He was got by Royal James. Terms on application.

THOS. ALLIN & BROS.

**Lake View Farm, OSHAWA
ONT**

Market Review and Forecast

Office of THE FARMING WORLD,
Confederation Life Building,
Toronto, March 18, 1901.

Conditions of trade auger well for the future, but just now they are not very active, due doubtless to the continued stormy weather, which has kept back spring orders. Winter stocks, however, are being cleared out well and there will be less to carry over than for several years back. Money keeps steady at 4½c. to 5 per cent. on call. Discounts rule at 6 to 7 per cent. as to name and nature of account.

Wheat.

There is no material change in the wheat situation and prices continue about the same. No material harm is reported to the growing crops in the West from thawing and freezing, and the effect of the Hessian fly in the States is still uncertain. General crop conditions continue favorable. The *Trade Bulletin* of last week has the following regarding shipments of Ontario wheat :

"A considerable quantity of red and white winter wheat has been shipped out of Ontario of late for export via New York, one party in the trade stating that he knew of about 200,000 bushels that had gone forward via that port, latest sales being reported of about 30,000 bushels white wheat at 66½ and 66½ c. f.o.b. in the West, with a 13½c. freight rate to New York. Quite a lot of Ontario spring and winter wheat has also been shipped via St. John and Portland, last week's exports from those ports being 154,444 bus. Through rates to Liverpool from points west of Toronto via St. John and Portland are quoted at 28 to 30c. per 100 lbs."

There has been a little more demand here for export, and prices at the end of this week were a little higher, quotations being 66 to 67c. for red and white, 64 to 66c. for goose and 68 to 68½c. for spring wheat, as to shipping point. On Toronto farmers' market red and white bring 68½ to 69c., goose 65½c. and spring 66 to 67c. per bushel.

Oats and Barley.

Though the English oat market is reported firmer and higher, markets on this side have ruled quietier with an easier tendency in prices. No. 1 white is quoted here at 29 to 29½c. east, and No. 2 white at 28½ to 29c. middle freights. On the farmers' market oats bring 34 to 34½c. per bushel.

There is a fair demand for export of malting barley, which is quoted at 50 to 52c. afoot Montreal. Here the market is steady at 41 to 42½c. middle freights. On Toronto farmers' market barley brings 46c. per bushel.

Peas and Corn.

The market for peas has ruled steady. Quotations here are 62½ to 64c. north and west. On farmers' market they bring 65c. per bushel.

The corn markets rule steady, American being quoted at Montreal at 48½ to 49c. in car lots on track. American No. 3 yellow is quoted here at 40½c. Toronto.

Bran and Shorts.

Supplies are reported very scarce at Montreal and prices there are very firm at \$17.50 to \$18 for Ontario bran in car lots, and \$18 to \$18.50 for shorts. City mills here sell bran at \$16 and shorts at \$17 in car lots f.o.b. Toronto. Shippers' quotations are \$15 to \$15.50 for shorts, and \$14 to \$14.50 for bran at points west.

Eggs and Poultry.

Owing to increased receipts the market is generally lower. The Montreal market is easier at 15 to 15½c. for new-laid in case lots, and lower prices are look for. Last year at this time quotations there were 13½ to 14c. for new-laid. Prices have taken a decided drop here, and 13 to 14c. are the ruling figures for new laid in a jobbing way. On Toronto farmers' market new-laid eggs bring 15 to 17c. per dozen.

A good demand continues at Montreal for dressed poultry, where quotations are 9 to 10c. for choice turkeys, 8 to 9½c. for chickens, 8 to 10c. for ducks, and 6 to 8c. per lb. for geese in a jobbing way. Here the market is quiet, and prices are practically nominal. On Toronto farmers' market chickens bring 50 to 80c., and ducks 75c. to \$1 per pair, and turkeys 11 to 13c., and geese 7 to 9½c. per pound.

Potatoes.

The market for these is easier, owing to more liberal supplies. Montreal quotations are 39 to 40c. per bag of 90 lbs. for car lots on track. Here prices rule at 29 to 31c. for car lots on track, and 30 to 35c. per bag on Toronto farmers' market.

Hay and Straw.

The hay market keeps firm under a good local and export demand. Quotations at country points east are \$10 to \$10.50 for No. 1, and \$8.50 to \$9.50 for No. 2 baled hay on track f.o.b. Montreal quotations are No. 1 \$11 to \$11.50, No. 2 \$9.50 to \$10.50, and clover \$8.50 to \$9 in car lots on track. The market here keeps steady at \$10 to \$10.75 for No. 1, and \$9 to \$9.50 for No. 2 in car lots on track. On Toronto farmers' market hay brings \$14 to \$15, sheep straw \$9 to \$9.50, and loose straw \$6 to \$7 per ton.

Seeds.

A fair business is reported in seeds at Montreal, the selling price there being \$7 to \$9 per bus. for red clover, \$7 to \$9 for alsike, \$2.50 to \$3 for timothy, and \$2 to \$2.25 for flax seed. There is a good jobbing demand here, and prices are steady at \$6 to \$7 for alsike, \$6 to \$6.75 for red clover, and \$1.75 to \$2.25 per bushel for timothy at outside points. On Toronto farmers' market alsike brings \$6 to \$6.90, red clover \$6 to \$6.60, and timothy \$1.60 to \$2.25 per bushel.

Apples.

On Toronto farmers' market apples bring \$2 to \$3 per bbl. for culls, and \$3 to \$4 per bbl. for choice.

Cheese.

The cheese market continues on the downward grade. During the week the English market declined, which stimulated the demand somewhat, though holders there are losing no opportunities to dispose of their stocks. A better cable inquiry is reported at Montreal, but at lower limits. Quotations there are 9½ to 9¾c. for finest, and 9 to 9¾c. for undergrades.

Butter.

The *Trade Bulletin* has this to say as to the butter trade of last week : "What almost everyone in the trade expected and provided for, namely, an advance in price similar to that which occurred about a year ago, appears to have decided not to materialize. Just about twelve months since choice creamery sold in this market at 30 to 31c., and seconds at 27 to 29c. Thinking that the great scarcity which then existed might be repeated and quick profits secured, as was the case last spring, it has now become evident that more butter has been put away in cold storage than was needed for the requirements of the trade, as shipments are being made to England in order to reduce surplus stocks. Sales of choice fresh creamery have been made this week at 22c. in lots of 15 to 20 packages, but for anything below strictly choice fresh arrivals from the factory, the market is positively sick, as we hear of last fall creamery being offered at 19 to 20c." Creamery prints are reported steady here at 22 to 23c., and solids at 20 to 22c. with inactive buying. The supply of dairy butter keeps large with prices at 17 to 18c. for pound rolls, and 16 to 17c. per lb. for large rolls in a jobbing way. On Toronto farmers' market pound rolls bring 18 to 22c., and large rolls 18 to 20c. per lb.

Cattle.

The cattle situation shows a little improvement, though cable quotations were lower at the end of the week. Feeders in the West are getting alarmed at the scarcity of good stock cattle in the United States. A prominent cattleman who has recently returned from a stock-buying trip to Texas and Kansas, states that this spring the stock growers of those two States have the big end of the bargain. They have as many herds of cattle as usual, but their prices are so high that as yet very few Northern men have bought. A good many of the Black Hills, Montana and Wyoming cattlemen, who have always bought in Texas, have gone there and have tried to make deals, but their check books have been undisturbed as yet. This cattleman states that the scarcity of good stock cattle in the United States is alarming. A few years ago there was any amount of old steers on the Western ranges, which were turned off when occasion demanded it, and the average age of beef cattle was placed at three years. Now practically all of the old animals have been cleaned up from the ranges, and the average age has been reduced to two years. The number of stock cattle on the Black Hills and Wyoming ranges was never lower than at the present time. The owners of ranges do not feel like buying Southern stock cattle at present prices.

Quite a few cattle were offered at the Montreal Stock Yards last week, but the demand was good. Prices were firmer as follows: Extra prime beefs, 4½c.; choice cattle, 4½c. to 4¾c.; good cattle, 3¾c. to 4½c.; fair cattle, 3c. to 3½c.; common cattle, 2½c. to 3¼c.

On Toronto cattle market on Friday receipts of live stock were fairly large, consisting of 697 cattle, 1,165 hogs, 232 sheep and 20 calves. The quality of the cattle was fair. There were some well finished lots of shippers, as well as butchers' cattle. Owing to the light deliveries earlier in the week trade was good, and nearly everything was bought by noon in the different classes. A few of the finest loads of exporters sold at \$5 per cwt., but this price would have been paid for choice cattle earlier in the week if they had been on hand. The demand for the best grades of butchers' cattle was good, and

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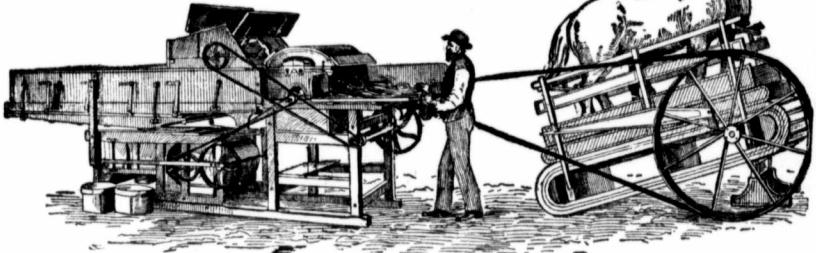
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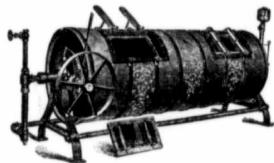
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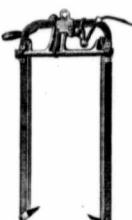


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