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Windsor Salt

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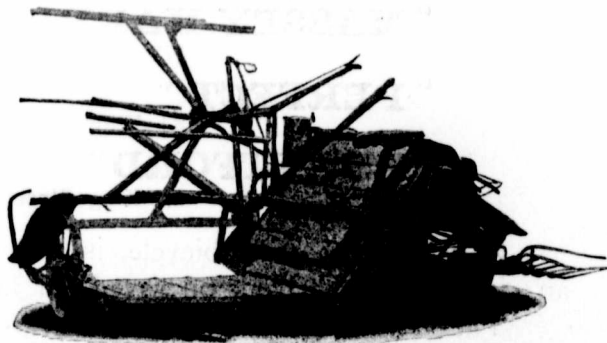
Can only be secured by close attention to every detail. Much of the paper sold as vegetable parchment for wrappers is only imitation, and quite liable to impart a bad flavor to butter. We import large quantities of the genuine article direct from Germany. We supply it plain or printed. Write for samples and prices.

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THE NOXON CO., Limited, INGERSOLL, ONT.

The Farming World

For Farmers and Stockmen

VOL. XX.

MAY 13th, 1902

No 18

The Beef Cattle Trade

THE EFFECT OF REMOVAL OF RESTRICTION AGAINST ARGENTINE CATTLE IN GREAT BRITAIN

THE beef cattle situation reached another stage of development last week when the Hon. Mr. Hanbury, President of the British Board of Agriculture announced that the restrictions on the Argentine live cattle trade would be removed allowing the Argentine cattle equal privileges with Canadian in entering the British markets. Coming as this does so soon after the Argentine had raised the embargo against the importation of pure bred stock from Great Britain into that country, it would seem as if some sort of a "tit for tat" arrangement had been previously agreed upon. However, that may be, the fact remains that the removal of the embargo against Canadian store cattle is not of the first importance in the opinion of British statesmen. From a British standpoint this reciprocal arrangement will be of far greater value to the British trade in pure bred stock, than anything it might gain by the removal of the embargo against Canada. The Argentine previous to the prohibition of pure bred stock importations into that country a year or two ago, had been the largest and best purchaser of Britain's high class breeding animals paying high prices and securing the best animals. This trade as we pointed out a few weeks ago is likely to be renewed this season on a larger scale than ever, which will explain to some extent the desire of the British Government to lessen the restriction against Argentine cattle.

The English ports were closed to live cattle from the Argentine Republic in 1900. In 1898 the imports of live cattle from that country amounted to 89,000 head. Efforts were made by the Argentine government in 1901 to have this restriction removed, but they were unsuccessful. However, if they were unable to ship live cattle they made great headway in the shipment of dressed beef to Great Britain, the figures being 771,929 cwt. in 1901, as compared with 411,962 cwt. in 1900. This is a gain of nearly 100 per cent. and would offset in a large measure the loss of their live cattle trade. The diversion of so many live cattle that had formerly been sent to Great Britain on foot into the dressed beef trade is evidence that the removal of the restrictions will not influence the markets as much as many would suppose.

But the question which dealers

and cattle raisers on this side of the Atlantic are asking is what effect the British Government's recent action will have on the price of beef cattle. The dealers in this city express different views regarding the matter. While some believe it will bring the price down, others are just as confident that it will have little effect for a time at least. We are inclined to the latter view. The high prices for beef at the present time are due to several causes, one of the chief ones being the scarcity of cattle not only in Canada but in the United States and Great Britain. While this is true consumption has greatly increased, especially in the United States and the old land. The supply of live stock in these countries is not keeping pace with the home demand. During the past ten years, population has increased much faster than the number of cattle, hogs and sheep. According to federal census figures recently made public, the number of beef cattle in the United States has increased but 12 per cent. in the decade, while population gained 22 per cent. In milch cows the increase is less than 4 per cent., in sheep 11 per cent. and in swine 9½ per cent. In a word population or the power to consume has increased twice as fast as the number of meat and dairy animals. In Great Britain the situation is somewhat similar. During the past decade while the population has increased, 3,720,000 the number of cattle has only increased some 133,000, while sheep have decreased to the extent of 3,200,000 head. These figures require no comment as they explain to a very large extent the rapid increase in the consumption of meat products of late years and the falling off in the supply.

Expert Dairy Testimony

Dairymen should read carefully the report of the Dairy Conference elsewhere in this issue. This conference was of a somewhat unique character, in that the delegates were those who are making a specialty of instruction in the making of cheese and butter. It was a gathering of experts, and in this report, which was especially prepared by a delegate for the readers of *The Farming World*, will be found the expert testimony of those who have made it their life-study to advance the cause of good dairying in Canada.

A prominent feature of the conference was the attention given to the patron's or farmer's side of dairying. The patron is no longer expected to supply whole milk only, but pure, clean-flavored milk, that will leave no bad taint in the

finished product of cheese and butter. The trade demands this, and if the farmer will not willingly supply milk of the best quality, he must be made to do so. The experience of the instructors present, and it coincides with our own, is that the majority of patrons do not wilfully neglect their milk, but through ignorance of what is required in the care of milk, fail to perform their duties in relation to co-operative dairying, as they should. Such being the case, some special effort should be made to reach the patron and instruct him as to what his duties are.

Another subject that was strongly emphasized, was that of proper sanitation in cheese factories and creameries. Too strong emphasis cannot be laid upon the importance of this. A great many of the factory buildings and surroundings in this country are a disgrace and should not be tolerated in any civilized community where any regard is had to the public health, let alone the manufacture of so highly concentrated and delicate a food product as butter or cheese. Surely it is time some strong measures were put in force, either to compel better buildings and sanitary conditions, or that such factories as will not listen to reason in this matter shall be put out of business.

The discussion on the work and methods of instruction in the different provinces should lead to improvement in this direction. That Ontario, the pioneer in dairy matters in Canada, was shown to be behind the other provinces in her methods is something that our dairymen should turn over carefully in their minds. While the instruction in this Province has been valuable, it seems to have lacked in not having a sufficient grip on the factories to compel better methods. We would be glad to have the views of any of our readers on this and other matters discussed.

A British Report on Canadian Cheese

At the dairy conventions and elsewhere during the past winter the statement was made by the Hon. Mr. Fisher and others that Canadian cheese had greatly deteriorated in quality during 1901. This statement is fully sustained in the report of the cheese sub-committee of the Home and Foreign Produce Exchange of London, England, received by the Minister of Agriculture a few days ago. Coming as it does, from the very parties in England, who handle Canadian cheese, the report has the greater signifi-

cance for our dairymen. It confirms the view which we have frequently expressed in these columns of late, that our cheese trade has reached a critical stage in its history and that our dairymen must make several steps forward if they wish to retain, let alone improve upon, the position they now hold in the British market. The report is as follows:

"Attention has to be drawn to the fact that the general quality of Canadian cheese shipped during the season of 1901 has not been up to the standard that previous seasons have led importers to expect. This is the more disappointing as importations from New Zealand have shown an improvement in quality.

"Rankness of flavor has once more been a characteristic, particularly of the earlier makes, and very little advance appears to have been made in the direction of eliminating the cause of this defect. Whenever consumptive demand became slack, and stocks consequently accumulated, flavour developed to such a degree as to considerably depreciate the value of the goods quite independently of fluctuations of the market. This in all probability arises from the fact that cheese are shipped too young, and in that condition are susceptible to rapid change and to external influences. Garlic has been a particularly prevalent flavor during the past season, and whatever may be the cause, the presence of this rankness is a serious blemish, and no stone should be left unturned to deal with it promptly and effectually.

"A feature of the past season has been the increased number of heavy cheese made. It cannot be stated too emphatically that heavy cheeses require stronger boxes. Importers have suffered much annoyance and loss from the thin and brittle boxes, totally inefficient for the purpose, in which these cheese are sent. Heavy cheese in thin boxes invite breakage, whereas well boxed cheese will often enable a seller to bring off a deal that otherwise would not have gone through. The marking of weights upon boxes is also a matter to which more attention should be paid. A year ago a recommendation went out from the cheese sub-committee that all weights should be stencilled or rubber-stamped on the boxes, and the figures should be at least 1½ inches long. This suggestion has not been adopted sufficiently widely. The trade here would be glad to see an end put to the method more generally employed, viz.—of scribbling the weights with a lead pencil; such figures become smeared and obliterated, resulting in endless mistakes and confusion.

"Finally, great importance is attached here to the system of cool air ventilators, at present installed on some of the steamers carrying cheese between Montreal and London. It is urged that pressure be brought to bear in Canada as well as on this side, in order that all steamers carrying this traffic

should be so fitted. Its efficiency has been proved by the experience of the past summer, when the improved condition of cheese landed from cool-air ventilated steamers was manifest, as compared with cheese landed from steamers not so ventilated. Were the system generally adopted, the improved condition thus obtained would tend greatly to promote popularity, and so increase the consumption of Canadian cheese, and it is felt that factorymen and dealers will be consulting their best interests in urging its adoption. To give point to this argument, it should be remembered that all vessels carrying New Zealand cheese are fitted in this manner."

The Binder Twine Supply

In the Farm Implement News of April 24th, appears the following: "It would not be surprising if as a result of the workings of the Philippine tariff law the tariff on manilla binder twine exported into Canada is restored. The use of manilla twine is far more extensive, proportionately, in Canada than in the United States. It was at first supposed that the export tax collected on hemp at Manila would be rebated on all hemp shipped to the United States, thus allowing the advantage of the rebate to Canadian manufacturers who received their supplies through the United States importers. But the law has been interpreted to mean that the hemp must be used in the States in order to participate in the rebate. As a result of this United States manufacturers will have an advantage of 1-3 cent per pound to begin with. Canadian manufacturers are alarmed over the outlook and have taken up the matter with the government with a view to obtaining relief.

"The commissioner of customs of Canada has written the authorities at Washington, asking if the rebate will not be refused on hemp going into twine and rope made in the United States but exported to other countries. The reply sent him states that rope and twine will have the same status as other manufactured products and may be exported without being subject to the Philippine export duty."

If this be correct, the American twine manufacturer will have considerable advantage over his Canadian competitors in supplying the Canadian trade with twine. We hardly think, however, it will result in the duty on binder twine being restored. If not, and the above interpretation of the Philippine tariff law is sustained, it should mean cheaper twine for the farmer.

As to the outlook for binder twine prices, a great deal will depend upon crop prospects. Crop prospects are being watched now by those in the business with more than usual interest. Some of the most conservative leaders in the twine business have expressed the belief that in the event of

a demand equal to that of last year a twine famine will ensue. On the whole it appears to be conceded that the demand will not be as great as a year ago, but not enough, less, to leave a surplus of twine, as the supply of twine is said to be considerably below that of 1901. However, time will tell and should a big crop be assured, prices will likely run high.

To Test Cattle in Great Britain

Dr. A. G. Hopkins has been appointed to represent the veterinary branch of the Dominion Department of Agriculture in Great Britain with head quarters at Glasgow. He will assume the duties performed last season by Dr. J. Rutherford, now chief veterinarian for the Dominion. Dr. Hopkins leaves for Great Britain immediately in order to prepare for this season's importations of live stock. The certificates issued by him will be accepted by the United States authorities in the same way as were those issued by Dr. Rutherford last season.

Money for Canada's Display at St. Louis

In the supplementary estimates brought down last week at Ottawa the sum of \$175,000 is asked for the exhibitions at St. Louis and Osaka, Japan, in 1903. We presume the bulk of this amount will be appropriated towards Canada's exhibit at St. Louis next year. By beginning thus early, exhibitors of live stock and agricultural products will have a better opportunity to get ready than was the case in connection with the Pan-American in 1901.

Horses for the Army

A delegation from the British War Office have during the past few weeks been looking into the way in which purchases of army horses have been made in Canada. Though no definite statement was made, the delegates, it is safe to assume, were very well satisfied with what has been done. From 14,000 to 16,000 horses have been purchased in Canada at a cost of \$1,500,000. The delegates who sailed for England last week will report to the War Office the result of their mission. Col. Dent, Imperial remount officer in Canada referring to this matter says:

"It is now impossible to get horses in this part of the country. The farmers are busy seeding, and then the Government are getting horses for the fourth contingent, and this gives us little chance to procure remounts. Then, again, when you have exported nearly sixteen thousand horses, it is but natural that there should be some difficulty in procuring more. On this account, accompanied by a number of officers, I will leave on the 26th of May for Calgary, and continue to try to secure as many horses as possible."



New Dairy Building, Industrial Fair, Toronto.

Preparations for the Industrial

Preparations for the Toronto Industrial Fair of 1902 are progressing apace. Already the agricultural and live stock committees have met and revised the prize lists. The new manufacturers, arts and dairy buildings are being pushed forward rapidly and the first of September will see them completed and fully equipped for this year's exhibition.

Quite a number of important changes have been made in some of the live stock classes and on the whole the prize list in this department will be increased by several hundred dollars. Over \$600 has been added to the horse department alone making a total of fully \$10,000, including speeding. Of this \$600, \$250 is contributed by the Canadian Horse Breeders' Association, \$100 by the Clydesdale Association, \$100 by the Canadian Horse Show and \$50 by the Hackney Society. In addition two gold medals have been donated by the English Shire Horse Society and two silver and one gold medal by the English Hackney Horse Society. A new arrangement that will add very much to the comfort of visitors is that the horses will stand in stalls numbered to correspond with the numbers in the catalogue. The judging of the heavy horses and the breeding classes will take place on the afternoon of the first four days of the second week of the show. This will give farmers and others interested, an opportunity to see the judging done.

In the cattle classes one or two important changes are made. A class for three cows bred by exhibitor has been added to the Short-horn class. In Ayrshires a class has been added for dry cows in calf. The important change, however, is that referring to the judging of Ayrshires. Three judges will

be employed. Only two will judge on a class at one time and one of these will change off with the judge who has not acted in the next following class. This plan will be followed throughout in judging this breed and should aid in securing better and more impartial awards.

In the sheep department the classification recommended by the Sheep Breeders' Association has been adopted. In brief this is as follows: Ewes instead of being shown in pairs will be shown singly and a pen for ram lamb and three ewes will be added. The Merino section has been struck out and a class added for Hampshire and Suffolk Downs. Prizes will be given for sheep shearing. In all over \$100 has been added to the prize list in the sheep classes.

In the swine department the Poland China class has been cut out and the section reading "one boar and four of his produce" is made to read: "4 pigs the produce of one boar or one sow." In poultry a class is added for dressed poultry and eggs involving an addition of \$100 to the prize list.

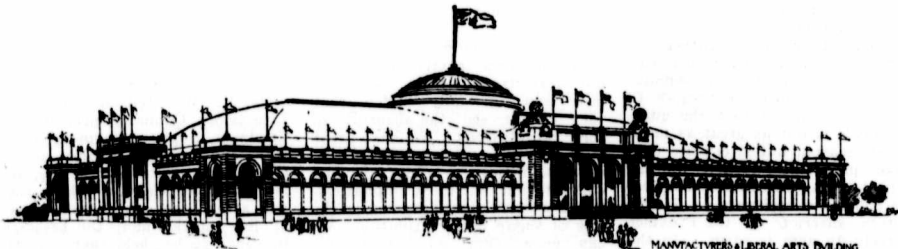
A couple of new classes have been added in the cheese section, one for Canadian flats and one for Canadian Stilton. The butter-making competitions will be made a greater feature than ever. They will extend over eight days of the show, but the competition will be divided up so that each one will make butter on two days only. The work is being spread out so as to make butter-making a special attraction on each day of the Fair. Cheese-making will also be carried on though there will be no competition in this branch. An expert will make cheese each day as an educational and attractive feature. All this is made possible by the new dairy building and its equipment.

Pointers for Cattle Feeders

As the dairying and beeving interests yearly become more important, the question of securing the advantages of a first-class pasture for twelve months of the year comes to the very front as a live issue. The great loss in the use of dry foods arises from the inability of the animal to thoroughly digest and fully assimilate the nutrition therein. This failure results in impaired health and reduced flesh or dairy returns, which also lack the fine flavors secured from the best classes of pasture. Roots and ensilage while helpful, have not proved entirely satisfactory. Experiments have been made with various aromatic preparations and some claim to have obtained desired results, not only from the standpoint of quality and quantity, but also from that of economy, while others are as strong in their convictions that the whole run of aromatic preparations are a fraud. While there is such difference of opinion, the matter is well worth investigating.

In these days of keen competition every leak must be stopped, every ounce of food utilized. Nature abundantly supplies aroma in mixed pastures, and the superior flavor of milk, butter and beef from animals fed thereon would indicate that if similar results are to be obtained from dry foods, those working on the line of aromatics are probably on the right track, but if they are, it is not to be expected that all manufacturers have succeeded in providing the proper combination to secure these results.

Some preparations are claimed to be purely aromatic, and require during six months when fed regularly twice a day, only about 16 pounds for a full-grown animal. With these only a tablespoonful is used with a ration. Other preparations having a food value combined with the aromatic value and using a cupful, about 4 ounces, with a ration, require fully 90 pounds, for six months, this 90 pounds having no more aromatic value than the 16 pounds of the pure aromatic; the difference in bulk being generally made up with oil cake meal, cotton seed meal, shorts or a meal combination.

MANUFACTURERS' LIBERAL ARTS BUILDING
INDUSTRIAL EXHIBITION GROUNDS
TORONTO.CONSTRUCTION & DESIGN BY
THE ARCHITECTS

The New Manufacturers' Building.

These bulky preparations, if properly combined from an aromatic point of view are all right, but are not worth to the consumer over one-quarter as much per pound, including their food value, as a pure aromatic, providing that the aromatic qualities of each are equal, which may not be the case.

This question of comparative values each feeder should carefully consider as it has hitherto been largely overlooked.

The fact that practical men are year after year continuing the use of aromatics in feeding live stock would appear to be convincing evidence that when properly prepared they are of real advantage.—J.F.G.

Union Stock Yards Open

The new Union Stock yards at Toronto Junction were opened for business on Thursday last. The event was celebrated by a luncheon given by the president and directors to a number of leading agriculturists. Among those present were: The Hon. John Dryden, Minister of Agriculture; Arthur Johnston, President of the Dominion Cattle Breeders' Association, and Mr. John Gardhouse. In addition to a number of prominent citizens of the Junction, the live stock dealers in the province were well represented.

Our Western Letter

Price of Cattle. Season Backward for Seeding. Disappointment in Store. Cost of Dairy Work. Good Opening for Nurseryman.

Your correspondent would be very glad to hear that Ontario farmers are receiving a price for their cattle, proportionate to the reported retail prices of meat in Ontario cities. A reliable informant says that prices in Hamilton and Toronto have advanced to unheard of figures. I hesitate to quote the prices mentioned, they seem so incredible. In Winnipeg there has been a considerable rise, which we have been attributing to local causes, bad weather and roads for shipping, etc. But there has been no unusual advance in the prices paid to feeders.

While the wheat grower has suffered a certain amount of loss through the seeding operations being delayed by wet weather, the dairyman has reaped a rich harvest. The price of butter remains at almost winter figures. Of course, this means that the quantity made is not as great as usual at this season, but it is price that makes profit, not quantity—in the farm dairy at any rate. The season continues backward. In the eastern district of the Province scarcely an acre is sown. In the central and western a certain progress has been made, but it is not until we get into the Territories that we find any substantial progress has been made. Some of the farmers of Assiniboia have

The addresses were all of a congratulatory character. Messrs. Dryden and Johnston referred to the good prospects that were before the Company and believed that the up-to-date accommodation it was providing would be of great advantage to the live stock trade of Ontario. President J. D. Allan gave a comprehensive statement of the aims and objects of the Company. The Company had already expended \$150,000, and more would yet be expended. The aim had been to get as many of those in the trade interested financially in the Company as possible. In this they had succeeded very well as a large number of drovers had taken stock. A feature of the Company was that it carried the insurance on all stock delivered to it, relieving the drovers of this responsibility. At present the yards cover 35 acres, but they had 100 acres, so that the accommodation could be easily increased. One of the novelties of the yard is the large weighing scale provided. It has a platform 64x14 feet, and a capacity of 55 tons, weighing down to five pounds. It was bought of the Gurney Scale Co., Hamilton.

A number of car loads of cattle were received at the new yards on Thursday evening, so that business has already begun in connection with the new cattle yards.

cultural contemporary contains, in a recent number, a somewhat heated attack upon the Dairy Superintendent and the work of the dairy department in Manitoba. The basis of the editor's argument is the fact that the gross expenditure of the Dairy Department of Manitoba exceeds the net cost of the Guelph Dairy School. The expenditure for dairy purposes in Manitoba in 1901 was \$7,609.89, which includes dairy school and staff of four instructors (three months each year); salary of superintendent and two factory instructors throughout the year, office expenses and stenographer, travelling expenses of superintendent and instructors, inspection and instruction at factories, judging at fairs, milk and rent of building for dairy school, etc., etc. Ontario's expenditure for similar services for 1901 was over \$35,000 and not a cent too much. We consider that the small amount which the Province of Manitoba is able to spend is well applied and that such criticisms as that referred to are not only unjust, but absurd.

In the above connection, it might also be mentioned that the Dairy Superintendent and his aides are among the main props of the Farmers' Institutes, their time and expenses, when engaged on institute work are paid from the dairy appropriation.

There is at the present time an excellent opening in Manitoba for a live nursery, a firm that will advertise and otherwise endeavor to push business. Such a nursery could do more to encourage fruit growing than all the preaching that the subject has had or can have. There are thousands of dollars sent out of the country each year for nursery stock, which would be productive of much better results if the money were spent for home-grown stock. Unfortunately for the would-be fruit grower in Manitoba the nurseries (three in number) in the province are run on a very small scale. It is not an uncommon occurrence for orders to be refused by them because the stock has been sold out. There is a large and increasing demand for hardy fruit and flowering stock, and we believe that a progressive man now entering the field would capture the trade without difficulty.

We are credibly informed (by an inside official of the Company) that the C. P. R. will construct 200 miles of line in Manitoba and 133 in Assiniboia during the present season.

Mr. F. W. Hodson, Dominion Live Stock Commissioner, G. C. Creelman, Supt. of Farmers' Institutes and Prof. G. E. Dav, of the Ontario Agricultural College, left last week for Calgary where they will attend the public auction sale of live stock, and the breeders' meetings to be held there at the same time.

Reports from the Niagara district state that the fruit crop was very materially injured by the frost last week. The injury is greater away from the lake.

their wheat sown, and have gone off for their summer holiday.

There is disappointment in store for some of the people who are banking on an annual production of grain in Western Canada equal to that of 1901. It is unpleasant to contradict such rosy views of the future, but, it would be equally unpleasant to be obliged to admit in some future issue, that our expectations have been too inflated. Prosperity does not demand a succession of such a season as that of 1901. Progress does not necessitate a continuation of the present boom in agricultural real estate, in immigration and in commercial and industrial schemes of all kinds in the West.

The beet sugar maggot has got into the brain cavity of some of our local "trade-pushers," and they have been so badly bitten that they cannot see the absurdity of their expectations. We have great faith in our country. We believe its capabilities are almost beyond computation, but most emphatically we assert they are not in the line of sugar beet cultivation. We can grow very good beets for stock feed, analyzing seven and eight per cent. sugar, but growing beets for manufacture into sugar is as absurd as trying to grow cane sugar would be.

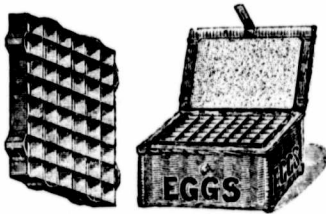
The Western edition of an agri-

Some Farm Conveniences

We give on this page a few illustrated articles, showing several handy and useful contrivances on the farm. It is our intention to publish more of these during the summer. If any of our readers have any suggestions to offer or better still, can send a rough pencil or pen sketch of some contrivance which they have found useful, with a short description telling how it can be made, we shall be glad to publish it.

TO CARRY EGGS SAFELY.

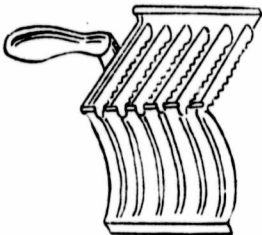
A great many eggs are lost during the season by being broken. To avoid breakage in the handling and carriage of eggs, some special contrivance should be secured for



the purpose. The accompanying cuts show a style of box used in England for the egg carrying trade. It appears to fill the bill, and something of this kind would be useful on every farm where eggs are handled for market or other purposes.

A SELF-CLEANING CURRYCOMB.

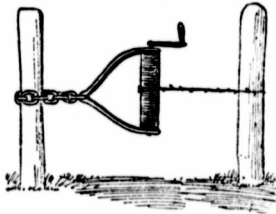
Everyone who has had much experience in cleaning horses knows how the currycomb becomes clogged with dirt and hair after a little use. And the task of cleaning off that implement is not always easily performed. The common method is to pound the comb



against a post or wall or side of a stall. This operation partially disengages the dirt, but sometimes not all of it. The accompanying diagram shows a new contrivance in the way of a self-cleaning currycomb. When it is desired to clean the currycomb a slight pressure of the thumb on the locking crimp will allow the plate to spring clear of the teeth and assume its natural curve again, and at the same time ridding itself of the dirt and hair which it has dislodged from the teeth.

SIMPLE WIRE STRETCHER.

It often presents a serious difficulty in building a wire fence to keep the wire taut while fastening it to the post. The device illustrated here presents the advantage



of cheapness, simplicity and efficiency. The roller is made of wood, turning on a stout iron rod, and is fastened to the post with a chain and a hook. Stretch the wire by attaching it to the roller and turning crank, staple firmly and move the stretcher on several rods, then repeat the operation. The contrivance can be made at home easily and cheaply.

TO PREVENT COWS SUCKING THEMSELVES.

There are many ways to prevent cows from sucking themselves. A spiked halter is shown in fig. 1. A buckle at the upper part, behind the ears, makes it quite easy to detach it. Fig. 2 shows how the spikes are secured. The spikes



FIG. 1.



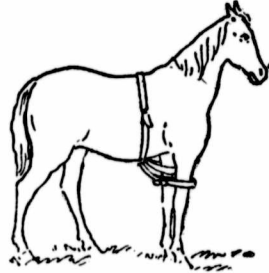
FIG. 2.

should not be over two inches in length. They are best made of wrought nails, which are sold at hardware stores. They are placed in an iron vice, and the heads flattened as much as possible by pounding with a hammer; they are then driven into a thick piece of leather, and secured by sewing or riveting it upon another piece of leather, as shown at B, in fig 2.—"Farm Conveniences."

TO KEEP A HORSE FROM JUMPING.

The illustration shows a hopple to restrain a horse from jumping. It consists of a surcingle about the body of the horse, together with two short straps that pass through the surcingle and around each foreleg, being buckled so that when the horse stands upright the strap will fall about half-way to the knees. This arrangement, which allows the horse to walk freely, prevents its running as well as jumping. A similar plan is to connect the forelegs of a horse by

straps secured just above the knee, but those who have tried both



plans prefer the one herewith illustrated. Some horses are difficult to catch when at pasture, and this device will prove valuable in such cases.

CISTERNS WITH FILTERS.

Complaints are frequent of the impure water of cisterns. This is inevitable under the careless management of these useful additions to the water supply, and is a fruit-

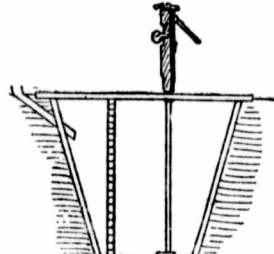


Fig. 1. A Complete Cistern.

ful source of what are called "malarial diseases." A roof gathers a large quantity of impure matter, dead insects, droppings of birds, dust, dead leaves, pollen from trees, etc., all of which are washed into the cistern, unless some means are taken to prevent it. Even then the water should be filtered before it is used for culinary purposes. One way of preventing foul matter from entering the cistern is to have the leader moveable, and swing from a waste pipe to the cistern pipe, shown on the

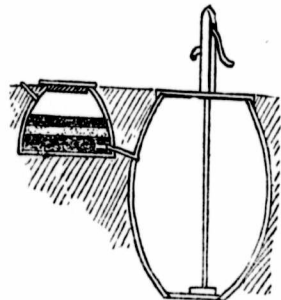


Fig. 2. Complete Cistern and Filter.

left side of fig. 1. In dry weather the pipe is turned over the waste, and after the rain has fallen for a

sufficient time to wash off the roots and gutters, it is turned into the cistern pipe. The cistern, fig. 1, is provided with a soft brick wall laid in cement, through which the water filters, coming out by the pump perfectly pure, and free from unpleasant odors. Rain water standing for months in impurities and filth cannot always be purified by simply soaking through a brick

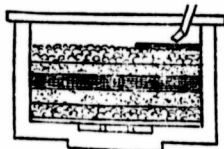


Fig. 3. Filter for a Barn Cistern.

wall, but should be filtered as soon as it falls. The main cistern, fig. 2, is made egg-shaped, to hold 100

barrels. The filter is flat-bottomed. The end of the pipe from the filter to the cistern is built solid around the end with brick. All water has to pass through the brick. The filter is filled half-full with charcoal, sand and gravel layers—one layer of each—the charcoal covering the bricks, then sand and gravel on top. The water, as soon as it falls, begins to filter, and passes into the cistern, where it stands free from impurities. The filter is built to hold 25 barrels of water, but is half-full of the filtering material.

Fig. 3 shows a good filter for a barn cistern. The top of it consists of broken stones, with a flat stone to receive the influx, so placed as to prevent heavy rains from disturbing the broken stones. This has a cover, moveable in part, to permit it to be cleaned out occasionally.—“Farm Conveniences.”

24. Prevents tramping of pastures by stock.
25. It fills your purse.

Figs and Artichokes

The Oregon Station has published a bulletin on the growth of artichokes and value for feeding pigs. The feeding experiment was with a lot of well-bred Berkshires, which were taken off of wheat stubble for the feeding from October 22 to December 11 and fed on artichokes supplemented by a small ration of equal parts of chopped wheat and oats.

An effort was made at the outset to compel the pigs to subsist on a diet of artichokes alone; but in the absence of grain there was very little gain, and the pigs were not contented. They were vigorous in their demands for something more substantial.

The artichokes were grown near the pens, so that the pigs could have access to them whenever they desired. The tubers were left in the ground for the pigs to root out as they were needed.

A portion of the plot was measured and the artichokes dug to determine the yield, which was found to be 740 bushels per acre.

During the experiment the six pigs consumed the artichokes grown on one-eighth acre and made a total gain in live weight of 244 pounds, or an average daily gain per pig of .81 pound. The pigs consumed during the period 756 pounds of grain, or at the rate of 3.1 pounds of grain for each pound of gain in live weight. In other experiments it has been found that it requires about five pounds mixed grain for each pound of gain in live weight. On this basis the feeding of the artichokes resulted in a saving of nearly two pounds of grain for each pound of gain in live weight. The pigs were healthy and vigorous throughout the experiment.

The artichokes used in this experiment “were planted the last of April in ground plowed deeply and prepared as we would prepare ground for potatoes. The tubers were planted in furrows, which were three feet apart. The seed was dropped 18 inches apart in the row and covered with a hoe. The plants were cultivated a few times, but after the tops were two feet high no further cultivation was necessary. The tops grew seven feet high before the end of the season.” The pigs left only a few tubers in the ground.

Always Room at the Top.

“Ah!” sighed the young widow, “no other man can ever fill poor John’s place. I loved him from the bottom of my heart.”

“Of course,” rejoined the sympathetic friend, “but you know there is always room at the top.”—Chicago Daily News.

The Value of Underdraining

The advantages of underdraining are no doubt fully recognized by every successful farmer. There are many, however, who do not seem to realize the great importance of drainage as a means of improving wet soils and putting them in a better condition for plant growth. The philosophy of drainage is very simple. If the surface water cannot get down into the subsoil or flow off, it can be removed by evaporation only. Evaporation is a cooling process and in the evaporation of stagnant water too much of the heat required for plant growth is consumed. Water is a poor conductor of heat and consequently the heat of the sun has much less effect in warming a wet soil than a dry one. Stagnant water also checks chemical action and the preparation of plant food. It also prevents the access of air. The roots of most plants make only slow and feeble growth in such soil and the yield of crops is much reduced and the quality of the product very poor.

A great advantage of underdraining is that one is enabled to work the land sooner. If the land is wet the working season is shortened. The land cannot be cultivated nearly so soon in the spring. Heavy rains make it unfit for tilling for several days at a time when crops are in need of a cultivation. And often such soil is cultivated when too wet, which is of great injury to the crop and also to the soil itself. There is always an uncertainty about the crop on wet land while on thoroughly underdrained land the crop can be got in fully ten days earlier and the farmer is more reasonably sure of a crop. Underdrainage by enabling the air to pass down into wet soils makes thrifty and more vigorous plant growth.

A question often asked is that if drainage will benefit a wet soil in a wet year will it not make the soil too dry in a dry year? To this it may be answered that a

drained soil holds a great amount of moisture by absorption. When the ground is hard and dry evaporation is much more rapid. But by being underdrained the soil can be kept more mellow, thus in a dry season keeping what moisture the ground has for the roots of the plants.

The following are a number of reasons given by an American authority for underdraining:

1. A drained soil is more readily freed from excess of water.
2. A drained soil can be worked many days earlier in the spring.
3. Less labor is required to prepare the soil.
4. All parts of the field are ready at the same time.
5. Manures and fertilizers are more readily appropriated.
6. A farmer can plant much earlier.
7. The seed germinates quicker and with more certainty.
8. Crops can be cultivated regularly with less labor.
9. Protects against damage from wet weather.
10. Protects against damage from dry weather.
11. The depth of soil is increased.
12. Gives larger feeding growth for the roots of plants.
13. It prevents surface washing.
14. Gives circulation of air through the soil which greatly aids plant growth.
15. Increase the length of the season for maturing crops.
16. Can harvest crops earlier and in better condition.
17. Increases the crop product from 25 to 100 per cent.
18. Improves the quality of the product.
19. Water grasses disappear.
20. It makes the land warmer.
21. It improves the texture of soils.
22. Protects wheat and other winter grains from freezing out.
23. Permits the filling of surface ditches.

Dairy Conference at Ottawa

(Specially Reported for THE FARMING WORLD.)

A most important dairy conference, the first of this kind and one which from its composition and the nature of the subjects discussed by those present should have a most far reaching and beneficial effect upon the dairy industry of Canada, was held at Ottawa on Tuesday, Wednesday and Thursday of last week under the auspices of the Dairy Branch of the Dominion Department of Agriculture. Mr. J. A. Ruddick as convener of the conference occupied the chair.

There were about thirty-five delegates present, composed largely of the heads of the different dairy schools in Ontario, Quebec and the Maritime Provinces, and the dairy instructors from the same. Also there were present Professors Harrison and Harcourt from the Ontario Agricultural College, Guelph, and Dr. Connell, of Queen's University, Kingston.

As the speakers all spoke in a time limit the addresses were mostly characterized by conciseness, and very little of the time of the conference was wasted.

In the majority of instances the first speaker upon a subject would close his address by moving a resolution. This had been anticipated, and during the early sessions of the conference a committee upon resolutions was appointed for the purpose of collecting the findings of the conference and embodying them in one resolution to be presented, discussed, amended and adopted by the conference before its close.

ADDRESS OF WELCOME.

The Honorable Sydney A. Fisher, Minister of Agriculture, in his address of welcome to the delegates made some apt references to the present conditions of the dairy industry, pointing out its weaknesses and how his department proposed to aid in remedying them.

Many, he said, regarded him as an alarmist when he attempted to point out some of the existing defects in our export cheese trade, but he would repeat them and say that the picture was in no wise over drawn. We must be up and doing in order to maintain our fair name and our grip upon the British market.

The present system of curing cheese, he said, was very faulty and largely responsible for the defects in quality complained of by the buyers; and feeling the need for better facilities for curing cheese the department is establishing two consolidated curing-rooms in Ontario and two in Quebec, for use during the incoming cheese season. It is hoped through these, to demonstrate the advantages to be derived from such curing-rooms, and so lead to their general introduction by those engaged in the cheese-manufacturing business. He asked for the hearty co-operation of those present in the furtherance of this movement.

In the course of his address Mr. Fisher paid a warm tribute to the syndicate system of dairy instruction now so largely practiced in the Province of Quebec. His remarks were followed throughout with much interest and were well received by the conference.

EDUCATION IN DAIRYING.

Next, Mr. G. C. Creelman, Supt. of Farmers' Institutes for Ontario gave an address upon "Education in Dairying." In the outset he pointed out how much there is to learn and what need there is of knowing our work well. There were three main sources of information, three essentials to success—reading, thinking, and close observation. Knowledge by means of the first of these agencies might be obtained through reading up-to-date books upon the subject, through the published results of the various experimental stations, and through taking and reading good agricultural papers.

In addition to reading we must think, we must bring good judgment to bear upon what we read in order to separate the wheat from the chaff, and also modify what we have read to make it apply to our frequently slightly different conditions.

Close observation was the third essential to success and probably the most important of all. Makers have ample opportunity for taking observation of what other leading makers are doing and there is no excuse for letting such opportunities slip. Again, they should all attend some dairy school and keep their eyes open to what was going on about them.

DISCUSSION

Mr. J. C. Chapais, Assistant Dairy Commissioner, observed that bad milk was the bane of the dairy business, in spite of the fact that the patron injured himself most. We must seek to educate him in the care of milk. The maker's reputation was injured, the buyer was injured, the patron was injured, through bad flavors in milk and its products. Cleanliness was of vital importance. Mr. Chapais spoke of the good results accruing from the introduction of the syndicate system of instruction in Quebec.

Mr. L. A. Zufelt said that the patrons could be best reached through the makers. All makers should be compelled to take a dairy-school course and take out certificates. Instructors themselves should be made to take instructions regularly.

Prof. Dean thought that every effort should be made to educate the children to cleanliness, as upon largely the future of the industry largely depended.

DESCRIPTION OF PLANS OF INSTRUCTION FOLLOWED IN THE DIFFERENT PROVINCES

As will be seen from the following summaries of statements made

by those who spoke for the different provinces, the system of instruction in Ontario is much behind that in any of the other provinces represented at the conference. Under the syndicate system in the Province of Quebec, where each instructor has only twenty to twenty-five factories to look after and report upon, in New Brunswick where the instructors are employed by the Provincial Government and clothed with a good measure of authority and expected to visit every factory, and in Prince Edward Island, where the instructor is employed by, and the factories all under the control of the Dairy Association, the inspection and instruction is much more thorough than can be hoped for under the system in vogue in Ontario. The sooner the syndicate system is introduced into Ontario the better for its dairy business. Realising the necessity for a change the Provincial Department of Agriculture is establishing two syndicates this year as an experiment, one in western Ontario under Mr. G. H. Barr and one in Eastern Ontario under Mr. G. G. Publow.

REPORTS.

JAS. MORRISON, WESTERN ONTARIO

Since the amalgamation of the Dairymen's and Creameries' Associations in 1897 instruction has been given to those who co-operated with the Association. The instructor is paid partly by the association and partly by the factory visited. The fees charged to factories vary from year to year according to the funds of the Association. The weak point of the system is that factories which are in greatest need of assistance from the instructor fail to employ him. The instructor visits a factory only when application is made to the Association. Mr. Morrison says that less than one third of the factories in his division apply for the services of the instructor. He also thinks that altogether too much of the time of instructors is consumed in testing milk for the detection of adulteration.

R. W. WARD, CENTRAL ONTARIO

Mr. Ward described his method of instruction rather than the system under which he was working, as this latter had already been described by Mr. Morrison, the same system being in operation throughout Ontario.

He usually tries to spend two days at a factory. He inspects the cheese with the maker, points out defects in the cheese, questions him as to the quality of the milk, his system of making, etc., and when necessary takes charge of a vat and demonstrates anything that he wishes to teach the maker.

He finds that "call visits" in addition to the more prolonged visits are very helpful.

G. G. PUBLOW, EASTERN ONTARIO.

Mr. Publow pointed out that under the present system the whole of Eastern Ontario is divided into only three sections with one instructor in each. This of course

would mean far more ground than one could begin to cover properly, even in instruction work. When we added to this that until recently much of the work of the instructor was consumed in testing milk for the detection of adulterations we could readily see how very imperfectly the work of instruction must, of necessity be done.

E. BOURBEAU, QUEBEC.

There are forty-five syndicates, including about 800 factories, in the syndicate system in Quebec with an inspector over each syndicate.

Instructors are expected to be at the factory when the milk is being delivered and to refuse all bad milk and to make a full report each week upon each of the different factories visited as to the quality of the milk and cheese, the condition of the factory, the work of the maker, etc. They are expected to visit the dairy school at St. Hyacinthe and keep in touch with the teachings of that school. In this way the system of instruction and quality of product are kept uniform throughout the different syndicates.

The inspectors are visited by the inspector-general at least twice a year. The syndicate system did not at first meet with the general approval of either the patrons or the factory owners; but the trouble now consists in finding time to visit the factories as frequently as wanted. Each factory pays about fifteen dollars towards the cost of inspection and the Dairy-men's Association the balance.

F. T. MORROW, P. E. I.

In Prince Edward Island the factories are all under the control of the Dairy Association and I am employed by this Association.

The salary of the inspector together with other expenditures of the Association are defrayed partly by grants from the Dominion and Provincial Governments and partly by a levy on factories equal to one and one half cents per 1,000 lbs. of milk. All factories are under the control of the Dairy Association which has the power of closing any whose sanitary or other conditions are not satisfactory. Most of the factories are joint stock, and all pay by test.

HARVEY MITCHELL, N. B.

In New Brunswick the factory inspectors are all employed by the provincial government.

The factories are divided into three sections or divisions with an inspector over each. The inspectors are expected to visit every factory in their division and are clothed with considerable power in that the provincial government bonuses all new factories which meet with its approval and can withhold the bonus from a factory whose sanitary or other conditions are faulty. No bonus is given to any factory which is built in too close proximity to another and where its establishment seems uncalled for.

BEST METHODS OF SECURING THE CO-OPERATION OF PATRONS IN IMPROVING THE CONDITION OF MILK.

G. H. BARR.

Impress the patron with the fact that good milk and cream are absolutely essential for the manufacturing of good cheese or butter and that bad milk means financial loss to themselves. The patron may be instructed as to the proper method of producing good milk in the following ways:

(1) Through Farmers' Institute meetings. One good dairyman should be put on to speak at all meetings in dairy districts.

(2) By instructors spending part of their time visiting the patrons.

(3) By having the makers keep close watch over the patrons.

We must aim to get all makers to reject all bad milk. He proposed to do this in his inspection and instruction work this coming season amongst the makers in his syndicate or group of factories.

J. W. MITCHELL.

The patrons of factories may be divided into three classes. One class comprises those who are thoroughly progressive and who are ready to listen to and improve by any suggestions made. There is no trouble with this class. They might, however, be made use of in educating the other patrons by getting them to speak at factory and institute meetings and give their practice and experience.

A second class is made up of the thoroughly careless, "don't care" sort of patrons who will pay no attention to the instruction given them. The only thing to do with them is to reject their milk and keep on rejecting it until they decide to pay attention to the instructions given them.

They thrive best about half way between two small factories, each of which practices accepting milk rejected by the other.

The third class that I would mention, the class which include 75 to 80 per cent. of the patrons, is composed of the average patrons, the patrons who mean to do and think they are doing well. They need to be both stimulated and educated. The first thing to do is to gain this confidence by taking a deep interest in them and their work. Then having gained their confidence begin instruction work; but the former must be done before the latter is likely to be very acceptable. Don't practice talking to patrons in a fault-finding spirit; but rather take an interest in and advise with them. Send out printed instructions to the patrons sufficiently often.

J. F. TILLEY.

One of the greatest problems we have to face and try to solve in New Brunswick is, how to gain the co-operation of patrons in the production of good milk. We must have the assistance of the makers. Get them to refuse all bad milk. If

the makers or the owners of factories persist in or insist upon the taking of bad milk we refuse to visit their factories until they make a change. The maker or the instructor should visit a patron when necessary, and give him the requisite advice. I have found it a good practice to send circulars to patrons monthly. Frequently when I visit a factory I take the stand and reject all bad milk, and I find that it has a wholesome effect.

DUTIES OF AN INSTRUCTOR—L. A. ZUFELT

The duty of an instructor is along the line of the improvement of the quality of butter and cheese, and not in the testing of milk for adulterations. There are three things necessary:

(1) The milk supply must be attended to. This is of first consideration. The instructor should endeavor to locate the cause of contamination where such exists. The fermentation test can be made good use of for this purpose.

(2) The instructor should give advice regarding the manufacturing of cheese or butter.

(3) The instructor should report upon the building and equipment. He should see that the building is properly equipped both for manufacturing a good article and for the keeping of this article until shipped. An instructor's report should be totally unbiased and should make suggestions regarding any defects that need to be remedied. He should report upon the quality of the milk-supply and also upon the maker and his work. The instructor should have more control over the maker than is the case at present.

Messrs. H. Mitchell, Publow and others strongly favored grouping factories into syndicates and delegating fuller powers to instructors or inspectors.

FERMENTATION TEST.

Mr. Hart, who delivered the opening address upon this subject said that great use could be made of this test in both cheese and butter making and also for domestic purposes, for determining the quality of the milk supplied.

It could be used to great advantage by makers for determining the sources of bad milk and for educating both themselves and their patrons. It would be a good plan to hold meetings of the patrons and let them see for themselves the nature of the milk supplied by the various patrons. The maker could have them note the wide differences that there were between different samples of curd as to appearance, odor, etc., and in this way make the test of great educational value to the patrons and lead them to study the all-important question of the care of milk. Besides the uses mentioned the fermentation test had various minor uses that might be mentioned, such as in the selection of milk for a starter, detecting troubles that came from individual cows, etc.

Mr. Bourbeau, inspector general of the syndicate system in Quebec, said that this test was equally as useful as the Babcock test. It is used in the instruction work in Quebec and is found to be very valuable in factory work.

SANITATION AT FACTORIES—DR. CONNELL.

In order to manufacture a good product a maker must receive good milk and must have good sanitary conditions under which to manufacture.

The reports of factory inspectors all go to prove that the sanitary conditions about many of our factories are most defective—the drainage is poor, the water supply is contaminated and many of the floors are open and leaky. Probably forty per cent. of the factories range from fair to poor, in so far as sanitary conditions are concerned.

The following are matters that must be considered under the question of sanitation:

1. Situation and construction of the building. We must look to securing a good water supply and facilities for drainage. Too frequently the water supply becomes badly contaminated. The different rooms of the factory should be properly constructed. The make-room should be well lighted and so situated as to keep out dust. The floor should be made of cement, and the walls of either cement or brick, so that the room can be readily cleaned. The floors should be perfectly water-tight. Along with water-tight floors a factory also needs proper drainage. The waste-pipe should be made of iron or tiles and discharge at a distance from the factory into a tank or a neighboring field. If the soil be not sandy, tiles must be put under the ground. This will largely do away with foul smells and contamination of water.

2. The handling of the whey.—Returning whey in cans is a source of danger, and again where the whey is fed at factories there is great danger of trouble unless care is taken to feed the hogs at a good distance from the factory. No pigs should be allowed within at least seventy-five yards of it, and better a greater distance. Whey tanks should be properly constructed for cleaning and should be cleaned at least once a week.

3. All factory utensils, (vats, etc.,) should be in good condition.

Instances are on record of cheese becoming mottled and discolored through the presence of iron in it, due to the use of utensils with the tinning off them. All curing rooms should be properly constructed for the controlling of temperature and should be properly ventilated. Factory wells, besides being free from sources of contamination, should be cleaned out at least once a year.

Professor Shutt being present said that no industry required greater sanitary care than did dairying. Water, he said, should be free from all organic impurities,

and in order to obtain a pure water supply for factories it would probably be best to draw it from a distance. Wells should be free from sources of contamination, and deep wells are much safer than shallow ones. Prof. Shutt said in conclusion, that he would like to go on record as decidedly opposed to shallow wells. His experiments have all gone to show that shallow wells are very dangerous.

Prof. Harrison pointed out that the uncleanly condition of curd sinks is a fruitful source of contamination. They should be scrubbed, scalded and ventilated.

Flies carry an abundance of harmful bacteria, especially the gas producing kind. He had found from examinations 250,000 germs and upwards per fly—mostly injurious kinds. Flies, along with cess-pools and other forms of filth, became sources of great danger. All wells, said Prof. Harrison should be well banked and have cement cribbing.

IMPORTANCE OF TEMPERATURE.

This subject was opened up by Prof. Dean. "Temperature," said he, "is the key-note to success in dairying." The principle has been laid down that the lower the temperature at which a product can be ripened, the better the quality of the product. We must take much more time than formerly in the ripening of our cheese.

Prof. Dean summarised the results of his own experiments in the ripening of cheese at low temperatures as follows:

1. Ripening at a low temperature gives a greater yield. This will counterbalance the time the farmer has to wait for his money.

2. Less loss of weight in ripening.

3. We get a better texture and a better flavor, which means a better price for our product. I never have gotten mealy or acidic texture when ripening at a low temperature.

4. We may expect greater uniformity.

LOW TEMPERATURES IN BUTTER-MAKING.

For the production of a good quality of butter and putting it upon the market in the best possible condition we need, first, the high temperature (pasteurizing), then the culture, and then a low temperature for storage, say 20 deg. F.

Dairy products when shipped should be gotten away to the station early in the morning if possible. We need low temperatures for both storage and transportation. It would seem best to have central cold storages with mechanical refrigerating plants.

Messrs. Leclair and Bourbeau who followed Prof. Dean, expressed themselves as strongly in sympathy with his address.

RESPONSIBILITY OF A MAKER.

A subject which provoked the warmest discussion of any during the conference was one introduced by Mr. J. A. Ruddick relative to the responsibility of makers for the

quality of their cheese. He spoke in part as follows:

Defects in the quality of cheese may be divided into two classes.

1. Those clearly due to manufacturing—acidity, weak, open body, poor finish, etc.

2. Those due to faults in the milk and for which the maker is not responsible.

The maker is the worst used man in the business to-day. His wages are not large and he suffers many injustices. The maker should have full control over the milk supply if he is to be held responsible to any degree for the product made from it. He should further be provided with proper equipment for both manufacturing and curing the cheese. Under ordinary conditions in our small factories makers should scarcely be held responsible for quality of product. If we could place the responsibility for flavor upon the patrons it would do much towards improving the milk supply. Mr. Ruddick favored holding the maker responsible for such defects as were due to negligence or incapacity on his part, and to this extent only.

A lively discussion followed, part of the speakers maintaining that a maker should be held financially responsible for any losses due to defects in his work, while others held that it would be to the best interest of the cheese industry to engage makers on the same principle as managers or foremen in other lines of business are engaged, that is, make them furnish satisfactory evidence of their ability to fill a position before engaging them and dismiss them as soon as they prove themselves incapable makers, but not hold them liable financially.

THE PASTEURIZING OF MILK AND CREAM. IS IT ADVISABLE?

Prof. Harrison, who spoke first upon the above subject, said that it was necessary to heat milk to 180 to 185 degrees to kill tuberculosis germs, and furthermore, that he had examined milk heated to this temperature, which contained only about 80 germs per cubic centimetre as against quarter to half a million germs per cubic centimetre in milk heated to 140 degrees. He much preferred the higher temperature. After pasteurizing cream it is necessary to inoculate it with suitable germs, that is, to use a proper starter. Otherwise, the pasteurizing will prove of little, if any, value. As no one germ is suitable for giving all the required conditions in ripening,—acidity, flavor, etc.—most of the cultures sold are not "pure cultures," that is, they contain more than one species of germ life. The best cultures contain about three different kinds of germs. Prof. Harrison favored pasteurizing for export butter, as it would insure greater uniformity and better keeping quality.

Mr. Hart added that, the pasteurizing of milk insured greater efficiency in skimming.

Prof. Dean.—"We pasteurize

summer and winter in order to obtain greater uniformity. If the butter has to be held, we find that it has better keeping quality. Also the skimmilk is better. I prefer belt-driven to turbine pasteurizers, as they are more economical users of steam."

THE FERMENTATION STARTER.

This subject was opened by Prof. H. H. Dean. "Cultures rightly used are a benefit," said he, "but a curse if wrongly used." Everyone who uses cultures should know something of bacteriology. We should have proper utensils for holding starters. A well made can with good material in it, and one that can be easily and thoroughly cleaned, is the only kind that should be used for this purpose. The can should also have a close-fitting cover. The milk used for making the culture should be heated to 180 degrees or over. Use skimmilk in creameries, as it is the most economical. Cultures require frequent renewal. Use cultures very carefully in cheese-making.

Mr. L. C. Daigle said that in his district he had the butter-makers use starters at all seasons of the year, in order to control the flavor of the cream and butter.

Mr. G. H. Barr said that he would not advise the use of a culture in cheese-making, excepting when it was absolutely necessary, and when used, it should be used very sparingly. He placed the maximum per cent. of starter to be used in cheese making at about one per cent.

THE ACIDIMETER.

A very interesting address was given by Professor Harcourt upon the acidimeter, which is a test used for determining the degree of acidity of milk, cream, etc. He advised its general introduction into cheese factories, and its use in the different stages in cheese making to determine the extent to which it might advantageously supersede the rennet and hot-iron tests. He thought that it could be used to great advantage at the time of setting the milk and also to determine when the curd was ready for dipping. The test should be used in creamery work for determining the acidity of the cream.

Mr. J. W. Mitchell spoke of the use that could be made of it on the weigh stand for determining the acidity of milk, while Mr. Publow spoke highly of its use in cheese making at salting time.

COMMERCIAL STANDARDS OF QUALITY FOR "FINEST" CHEESE AND BUTTER.

Mr. J. A. Ruddick described "finest" cheese and butter as follows:

"Finest" cheese.—1. Must be clean in flavor. The trade objects very much to cheese which shows signs of going off in flavor. "Finest," as regards flavor, does not necessarily mean the highest quality of cheese. It may be fin-

est and yet to a degree lack in flavor.

2. Must be close in body—no irregular holes, etc.

3. Color must be even.

4. Finish.—No rough edges or "standing collars," clean "skins," no mold.

The term "finest" is more or less elastic in meaning.

"Finest Butter."—1. Must be not only clean in flavor, but must have a positive, as well as a negative side to its flavor. Butter may have no bad flavor, but may be insipid, and consequently, may not rank as finest.

2. Color must be even.

3. Salting.—Quantity or rate may vary, but the salt must be well dissolved.

4. Finish.—Package must be well finished on top, and must be clean, neat and nicely stencilled. Boxes should be sacked.

A number of those present expressed their desire that the dealers be asked to give their definition of "finest" as regards both cheese and butter.

HOW THE SURROUNDINGS OF CHEESE FACTORIES AND CREAMERIES MAY BE MADE MORE ATTRACTIVE.

Miss Laura Rose, of Guelph, read an excellent paper upon the subject of the improvement of the surroundings of cheese factories and creameries. She said that many factories were blots upon the landscape, but blots which with improved surroundings, might be turned into beauty spots. What we find outside a factory largely indicates what we may expect to find within. Inviting surroundings are an outward sign of an inward spiritual grace, so to speak.

Instructors should comment upon the outside as well as the inside of factories, giving praise where praise is due as well as adverse criticism where such is called for. Factories should be centres of uplifting influences, and models of neatness and cleanliness and tidiness. It would be a good plan to offer prizes to be awarded to factories with the best kept surroundings. This principle is adopted on some of the best English and American railways, which give prizes to stations with the best kept gardens, and has a subtle influence upon the railway employees themselves as well as others.

REPORT OF THE COMMITTEE ON RESOLUTION.

Before the close of the Conference the Committee upon Resolutions presented its findings in the form of a resolution—or rather collection of resolutions—which was taken up, discussed, amended and adopted clause by clause. The following is a copy of the resolution in amended form:

1. That it would tend to secure better and more uniform quality of dairy products to have all cheese factories and creameries organized into groups or syndicates consisting of from 15 to 30 factories, each group

being under the supervision of a competent instructor.

2. In order to secure more uniformity in the work, the management of these groups should be centralized under one authority in each province.

3. Whereas the dairy industry would be greatly benefited by an improvement in the condition of the milk delivered to cheese factories and creameries; and whereas the most effective way to lead to a rapid improvement in the condition of milk would be to give to the farmers practical instruction upon the care of milk on the farm; Resolved, that in the opinion of this Conference, much good would result from short courses for farmers' sons in our dairy schools, the same to consist of a series of talks, followed by practical illustration and work on the best methods of producing, and caring for milk from the cow to the factory.

4. In view of the sanitary defects to be met with in a large percentage of our cheese factories and creameries—these defects covering such features as improper situation and construction, particularly of floors, walls and ceilings of making and curing rooms, bad drainage and removal of waste products with consequent air, soil and water contamination, all tending to a general uncleanness of the factory and its surroundings,—and as such defects have always a tendency to lead to deterioration in quality and lowering in market value of products made in such factories, and have as well a tendency to bring our entire product into disrepute: be it resolved by the Conference that it is advisable in the interests of our dairy industry that butter and cheese be made only in factories that are free from sanitary defects and possessed of well constructed and readily cleaned rooms, pure water, good drainage and clean utensils and surroundings: and further be it resolved, that in order to secure the above conditions it is suggested that each cheese factory or creamery should be compelled to take out a provincial license, to be granted only to those institutions which comply with said conditions.

5. Resolved, that the duties of the dairy instructors appointed in each province shall be to inspect the factory building and surroundings and all milk or cream supplied at such times as he shall visit any factory or creamery, and report on such details as are required of him, to assist the makers in improving the quality of their products; 1st by suggesting changes in building, equipment, and the methods of manufacture; 2nd by co-operating with the manufacturers in securing more milk or cream of better quality by distributing dairy literature, addressing meetings of the patrons, and calling upon them when necessary, and in such other ways as are directed by the provincial authority.

6. In order to assist in defraying the cost of this system of instruction, each factory or creamery might be charged a license fee.

7. Your Committee recommends that, while every means be used to reduce the amount of inferior cheese and butter, that in cases where the quality is below the standard, the cheese-maker or butter-maker shall be held responsible for those defects only which can be proved to be due to his negligence or inability; and, further, that the Provincial Departments of Agriculture be requested to furnish blank forms of agreements between makers and employees, which will meet the above requirements.

8. Resolved, that in the opinion of

(Continued on page 533.)

The Feeding of the Fowls

By A. V. Meersch, Poughkeepsie, N.Y.

The feeding of the fowls is a subject in which every poultry keeper is interested, for, whether the birds are pure breeds or mongrels, it is impossible for them to lay the greatest number of eggs they are capable of, or to keep in good health, unless the food supplied to them is of a proper description. The conditions under which the fowls are kept must, to some extent, influence the feeding. Poultry in small runs will not do so well on the treatment that is suitable to fowls that have a free range; neither will heavy breeds, such as Brahmas and Cochins thrive on a diet that would agree with Leghorns and other lighter framed birds.

Fowls in confinement are always the better for the first meal of the day to be of soft food. They also require a small quantity of animal food, as a substitute for the worms and insects they would obtain for themselves if they had their liberty. They must have plenty of green food. Cut grass is as good as anything and the fowls will always eat it readily. Lettuce and cabbage leaves have to be used if grass is not procurable. The green stuff, however, must never be allowed to remain in the run to become stale and offensive. In this respect, many poultry keepers are at fault in not taking the smallest trouble to keep the runs clean and wholesome. It can not be too often repeated, that if it is worth while to have any fowls at all, it is worth treating them properly. Hundreds of the small spaces in back gardens are left uncleaned for weeks together, till it is a matter of surprise that any eggs are ever laid.

The evening meal before roosting time should be of grain, both for fowls in small runs and those that have their freedom. Wheat is about the best all-round grain. The birds like it, they do not get too fat internally on it or acquire liver disease, as they so often do when fed on corn. The latter is not good as a continual food for confined fowls, but being cheaper than most other grain, it is very largely in use. The mixtures that are so often recommended are not satisfactory. They contain a large quantity of dust, and unless the birds are kept very hungry they will pick out their favorite grain and leave the rest. It is also difficult to give them a chance, if they have so many different varieties of grain at the same time.

When the fowls have a free run they will do fairly well on whole grain both morning and evening, particularly in the warm weather. When it is cold and wintry they will be more likely to lay if they are given a breakfast of hot, stiffly mixed meal. The soft food should always be mixed crumbly, and not sticky or sloppy. The poultry must always be able to procure

grit of some sort. On clay soils, even those that are running about free, will be all the better for an occasional barrow load of small stones and coarse sand. The fowls that are shut up should have the coal ashes and they are fond of broken up oyster shells, which they will eat greedily. The reply to the often repeated question as to the quantity of food to be allowed to each bird is always the same, viz., just as much as they will eat eagerly and no more. Some breeds will eat more than others and the appetite of individual birds will vary. A hen when laying will eat more than when she is moulting, but taking the average the cost of the food per bird should amount to little more than two cents per week.

Cure for Chicken Cholera.

All cases of so-called chicken cholera result from impure or unwholesome food, or filthy drinking water, and overcrowding at night in filthy houses, being obliged to breathe an atmosphere reeking with the rank odors of accumulated droppings. True cholera is of an epidemic character, and the fowls are suddenly affected and soon die. One of the surest symptoms of cholera is the discharges of the bowels, which are generally of a yellowish green, or as has been termed, "like sulphur and water," becoming thinner, greener, more frothy as the disease runs on. The breathing becomes labored and rapid, and the crop accumulates mucus and wind. The sick fowl becomes exceedingly weak and mopes around, the comb and wattles may turn very light, or nearly black; there is considerable fever and thirst, pulse becomes rapid but weak. These are some of the symptoms. You can judge from the

Poultry and Eggs.

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BROWN Leghorns, **Prolific** early layers; Strain won at Pan-American. Stock for sale—Minorcas, Barred Rocks, Chicest Strains, Eggs in season. JOHN B. PETTIT, Fruitland, Ont.

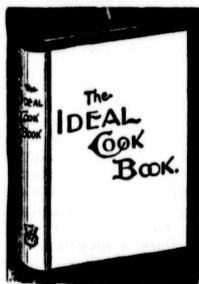
THOROUGHBRED high scoring Light Brahmas, Fishel White Rocks (direct), eggs \$2.00 per sitting. Barred Rocks, White Rocks, Buff Wyandottes, White Wyandottes, Brown Leghorns, Buff Cochins, Buff Cochins Bantams, Black Minorcas, \$1.00 per fifteen. No better stock anywhere. Leghorn Cockerels \$1.00. J. C. TEMPLIN, FERGUS, ONT.

FOR SALE. Barred Plymouth Rock and Mammoth Pekin duck eggs, 1 dollar for 12, also one extra choice pair of ducks not avin, price 2 dollars. *W. C. TREVERTON & SON, Belleville, Ont.

EGGS for setting. Silver grey Dorkings from splendid stock. John Taylor, Jr., Gait, Ont.

BUFF ORPINGTONS, imported this season from England, 8 birds costing \$125. Solid buff eggs \$3 per 12. Also breeder of Brown Leghorns, continuous layers, Barred Rocks, E. B. Thompson's White Wyandottes, Indian Games, true blocky type for export. I won leading prizes and sweepstakes at the Ontario and Branford shows. Incubator eggs \$2.50 per 100. J. W. CLARK, Importer and Breeder, Osnanda, Ont.

above whether your fowls have "cholera" or simply acute indigestion—induced often by the causes described above and a gluttonous appetite or feeding one food too long. In either case the first thing to do is to remedy the causes that have produced the trouble. Separate the affected fowls from the flock. If you are sure cholera prevails use the remedy given below. Fowls that are too sick to eat should have every four or five hours a pill made of the following ingredients: Blue mass, 60 grains; pulverized camphor, 25 grains; cayenne pepper, 30 grains; pulverized rhubarb, 48 grains; laudanum, 60 drops. Mix and make into 20 pills. When they have had time to act give half a teaspoonful of castor oil and 10 drops of laudanum to each. Give boiled milk or strong white oak bark tea to drink. If it is indigestion give a teaspoonful of soda water, followed half an hour later with a teaspoonful of sweet oil. Do not allow any food for 24 hours. Then give stale bread moistened with boiled milk.



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The Sugar Beet World

Devoted to Sugar Beet Culture in Canada and Allied Industries. Specially Representing the Farmers' Interests

Edited by JAMES FOWLER

Beetlets.

Any portion of the beet that appears above the ground is worthless for sugar purposes.

This is governed by deep plowing and close pulverization of the soil.

The first plowing is generally done in the fall, followed by shallow spring plowing and harrowing.

The soil is then ready for planting. Sometimes it is rolled after planting, but this depends on the nature of the soil.

Fertilizer Tests of Sugar Beets.

Experiments were undertaken to test the accuracy of the statement that sugar beets are of an inferior quality when grown on land to which stable manure is applied in the spring. The experiments have been conducted during four consecutive years, mostly on the station farm. Comparisons have been made of the quality of beets not manured, those grown with commercial fertilizer, mostly 3,000 pounds per acre, and those grown on land receiving in the spring, before planting the beets, from 40,000 to 80,000 pounds stable manure per acre. Beets from six varieties of seed were grown during the four years. The beets have been of high quality with all three methods of treatment, averaging somewhat better with the farm manure than with no manure or with commercial fertilizers.—G. W. Churchill, New York Experiment Station.

Sugar Beets in Manitoba.

The Winnipeg Free Press, says, in regard to that country for growing beets:

"On a previous occasion we have referred to the abortive attempts to grow sugar beets in this province, and expressed the hope that no more expenditures will be incurred by the government in the pursuit of this will o' the wisp. Unfortunately there are still believers in the possibility of establishing the sugar industry in Manitoba, and we understand that efforts will be made to induce the government to continue the experiments that have been going on during the past two or three years. Manitoba is a wonderful country. In certain directions the possibilities of the province are almost beyond imagination. But in certain other lines there is not the faintest chance for even a fair degree of success. No sane person will invest money in a peach orchard in Manitoba, and to experiment in sugar production is only a degree less idiotic than planting peach trees. Persistence in these experiments is due to an entire lack of knowledge of the

conditions necessary for success. We cannot suppose that the minister of agriculture and his advisers are ignorant of these facts, and hope that he will yet be able to persuade the sanguine investigators of the futility of further expenditure.

It is argued that the beets grow here and attain excellent size. This is true, the roots grow to an abnormal and unprofitable size and produce an abnormal quantity of juice of unprofitable quality. To make sugar from such beets would cost more than the sugar would sell for in the retail trade.

But even supposing that sugar beets of manufacturing quality could be produced here, that fact alone would not make this province a sugar producing centre. Sugar manufacture requires enormous capital, or an amount of capital that would be considered enormous in this country. A factory large enough to be operated at a profit requires an investment of about \$400,000, and produces sugar annually of a value of about \$500,000. A similar sum invested in dairy cows would produce butter worth about \$2,000,000 per annum, and if invested in land would produce wheat worth \$1,000,000. Such a sum would erect a hundred creameries of a higher standard than those now successfully operating in Manitoba.

The average acre of wheat costs slightly over five dollars per acre to produce. With the finest cultivation, such as given on the experimental farm, the cost is something over seven dollars per acre. The cost of producing an acre of beets is about fifty dollars, or equal to about eight acres of wheat. An acre of beets sells at most for about \$75.00, while eight acres of wheat are worth upwards of \$100. Would anyone leave wheat to grow beets, even if they were a sure crop.

The climatic and financial reasons were not sufficient the labor question should clinch the matter. Sugar beets require garden cultivation. Hand labor is essential. No machinery has been invented to take the place of hand weeding and thinning. When the Manitoba farmer has to pay twenty-five and thirty dollars a month for a man to ride a sulky plow, and promenade on the binder, mower and seeder, what will be the wages necessary to induce the hired man to get down on his knees and dig weeds out of the beet row with his fingers.

Manitoba has no money to spend in such nonsense. Any institution or body of men who, in the face of the foregoing well-known facts have faith in sugar beets should put their own money into the experiments.

Seeding for Sugar Beets.

(Continued from last week.)

Seeding of Sugar Beets—The most important points to be observed in the performance of this work are:

1. The distance apart of the rows.
2. The depth of planting.
3. The quantity of seed.
4. The proper way of planting.

As to the first point, I wish to say that the distance of rows is of considerable importance in the development of the beet later on, for the following reasons:

(a) The farther apart the beets are planted, the larger in size grow the roots.

(b) The development of the tops increases with the decrease of space.

(c) The yield will be small when either planted too close or too far apart, while a heavy crop can be grown when planted at a proper distance.

(d) It is also claimed that the sugar content of the beet increases when the plants are left closer together in the rows, though the distance of the rows remains the same.

(e) Beets grown close together contain not only more sugar, but also a higher purity, which is of vital importance for the manufacture of sugar.

(f) Close planting is more beneficial to the soil though it requires more moisture to grow the crop.

(g) The width of the rows is entirely dependent on the quality of the soil and its moisture condition. Where no irrigation is necessary and a large amount of moisture is present in the soil, a space of fourteen to sixteen inches between the rows is the most advisable, leaving the beets from six to eight inches apart in these rows, according to the richness of the ground. Where irrigation is practiced, rows from eighteen to twenty inches apart prove the most desirable, as this width permits of irrigation between the rows without unnecessary waste of land.

As to the depth of planting, let us state that in no case should it exceed two inches, while with average moisture conditions one inch to one and a quarter inches are the proper depths of depositing seed. If the seed is buried too deep, there is great danger that in case of rainfall soon after the planting, that the soil is packed too solid over the kernel, and instead of sprouting, especially when cold weather prevails, the seed decays in the ground or should it germinate, the sprouts are not strong enough to penetrate the deep layer of soil above and soon die without breaking through

the surface. On the other hand, if too shallow planting is practiced, the thin layer of soil surrounding the seed quickly dries out and quite often the sprouts which formed soon after seeding also dry out on account of a lack of moisture in the surrounding soil. It is for this reason, of retaining moisture as long as possible on the surface of the field, that the soil in which the seed is imbedded should be pressed tightly around the kernels, so as to prevent drying out as much as possible from penetration of the air into the surface soil.

While different ways of planting may be advocated by individual growers, while in some instances planting in ridges may be permissible, the only proper way of seeding is to deposit the seed in a perfectly level field, and to plant with the slope of the land, providing the same is not too steep so as to allow mashing of the soil by irrigation water.

The quantity of seed to be planted is of course dependent on its quality, as well as on the width of the drill rows. As far as the quality is concerned, there is very little danger of securing anything poor, as all the seed purchased by the sugar factories from Germany or France is repeatedly tested by government stations in said countries, and a guarantee is given to the purchaser, as to its germination, as well as to the sugar contents and purity, of the mothers from which it was raised. As to the width of the rows: Where the distance of the rows is from eighteen to twenty inches, not less than twenty pounds of seed per acre should be used. It is a wrong idea to endanger the first growth of the young plants through a poor stand from the outset in order to save 40 to 50 cents on seed per acre. If you put plenty of seed into the ground you are almost sure of getting a good stand, even should your land get dry too quickly, because the beet seed will come up first and there will be enough of it for a good stand. On the other hand, should a crust be formed on the field after a rain, one plant will help the other to break through the ground, provided they are close together, but should the seed be sown thin, and the young plants be far apart they will not be strong enough to lift the crust and will smother in the attempt of penetrating the ground.

And now the last question: Which is the best way of depositing the seed? To make the answer brief, I will say: Sow your seed dry and in continuous drill rows. While some advocate soaking the seed before planting, and depositing it in hills from six to eight inches apart, I will mention this, that if the seed is soaked or moistened, great pains must be taken that it is not kept for any length of time in this condition, as it will heat and thus smother the germs, or else the seed will mildew. Besides this danger of spoiling, the soaked seed never runs satisfactorily through the drill and a constant choking of the feeders is a common occurrence. Fur-

thermore, if soaked seed is planted and the seed bed dries out very fast, the germ which is developed through the moistening before seeding is unable to get an ample supply of water from the soil for its further growth and dies out in a very short time, leaving the seed lifeless in the ground, unable to respond to the effects of rain or later irrigation.

As to the planting of the seed in hills, it is hardly necessary to explain that in case of parasitic destruction the damage done to the stand in such a field will be from two to three times as large as it will be in a field of continuous drill rows, for wherever a hill has been destroyed there is not a plant for at least sixteen to twenty-four inches, while in the continuous drill row a moderately good stand can be secured by a careful thinning later on. Planting in hills also leaves more open space in the field and this encourages the growth of weeds and in case of frost or other adverse climatical conditions the isolated hills do not offer as much resistance as the continuous drill row with a thick stand of young plants.

In conclusion I beg to call your attention yet to the great importance of straight rows, which will facilitate the later operations of hoeing, cultivating and irrigating, to the necessity of a uniform speed of the team, which is hitched to the seeder in order to procure a regular

flow of seed, as every jerk will send a larger quantity of seed through the feeders, while less speed will decrease the flow of the seed through the funnels. Do not plant where the soil is so moist that it sticks to the wheels or to the press wheels, as the latter will pick up the fine soil over the seed and uncover the same, or form scales over the drill row, which dry in the sun and prevent the germs from breaking through the ground. Watch your seeder carefully so that you notice all irregularities, such as choking of the seed, etc., and remedy same immediately before you have injured your stand through lack of proper attention. Set your drill perfectly before entering the field—measure carefully the width of your rows, and the distance of the marker from the center of the machine, gage the depth of the runners, and last, but not least, see that the tongue is level and properly weighed down, in order to offset your weight on the balance of the drill.

Got Verdict for \$21,000

Bartlett, Hayward & Co., of Baltimore, obtained a verdict for \$21,000 damages against the West Bay City Sugar Company, of Michigan, and the American Surety Company, of New York, in the Superior Court yesterday in their suit to recover a balance alleged to be due under a contract for the

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New Building the Factory at Berlin.

erection of a beet sugar factory at West Bay City, Mich. The Surety Company was sued, as it had gone on the bond to secure the payments under the contract. The amount claimed, exclusive of interest, was \$28,000.

The cross-suit of the West Bay City Sugar Company against Bartlett, Hayward & Co., which was to have been taken up next, will be entered satisfied and settled to-day. In this suit the sugar company claimed \$180,000 damages for alleged loss caused by the factory not being up to the contract capacity and failure to complete it in a reasonable time. Judgment will be entered on the verdict for \$20,000, it is said, and the result of the litigation is that Bartlett, Hayward & Co. will recover \$21,000 and the claim of the sugar company is defeated.

The contract out of which the litigation grew was made February 27th, 1899. The trial commenced February 20th last. John N. Steele, John E. Semmes and Albert C. Ritchie were attorneys for Bartlett, Hayward & Co., and John Hinkley, of Baltimore, and John C. Weadock, of Bay City, Mich., appeared for the sugar company.

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The well-known seed firm of J. J. H. Gregory & Son, of Marblehead, Mass., have had a business career of nearly half a century. During this time they have won a reputation in every village and town of the land, and to-day Gregory's seeds are famous for their freshness, purity and reliability. Their seeds are all thoroughly tested every season, and those not up to the standard are destroyed. In buying Gregory's seeds it is satisfactory to know you are getting guaranteed seeds—seeds that will surely grow—and they come directly from the grower to the planter. Farmers and gardeners who want to be sure of their seeds should send for their catalogue. It tells all about good seeds and their guarantee. It is sent free to those who write for it, and should be read by every one who plants.

A Hog's Paradise.

E. T. Diehl, of Indiana, says: "The best way to use soy beans is to make a hog paradise. This is made by planting soy beans, cow peas and corn in alternate rows, and at the last cultivation two pounds of rape is sown to the acre. It is not expensive, and it makes pork as nothing else will. As one farmer of my acquaintance said: 'Make pork? Well, say, it is just like getting money from home.'"

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The Victim: When I was about one year old.—Chicago Daily News.

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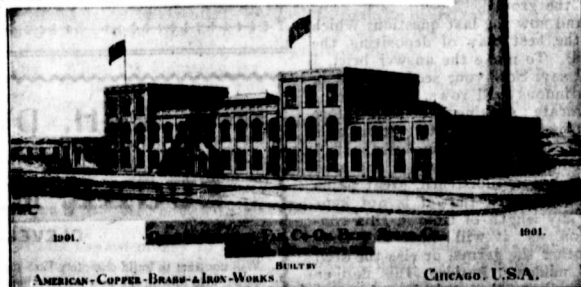
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The Agricultural Gazette

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

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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 10,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experiment 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 list of cattle, sheep, and swine for sale will be 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 undersigned by letter on or before the 9th 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 data will be published in the most condensed form.

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

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 A. P. Westervelt, Secretary, Live Stock Associations. 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, particular department of farm work in which a position 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 particulars only 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.

Wanted.—A good man to do all kinds of farm work, plough and be kind to horses. Will engage six months or a year. Good wages to satisfactory man. No. 956. a.

Wanted.—A young man or strong boy to work on a 150 acre farm near Cookstown. Good wages. No. 957. a.

Wanted.—A foreman on a ranch in the Northwest Territories. Must be capable and thoroughly reliable, have a general knowledge of stock and the putting up of buildings and corrals. References wanted. Salary \$420 a year and board. No. 958. a.

Wanted.—A good reliable man to do general farm work to be employed by the year or seven or eight months. Wages \$18 to \$20 per month. Farm near Owen Sound. No. 955. b.

Domestic Help Wanted.

Wanted.—A girl or woman to do house work on a farm. Small family. Good home. Must be respectable, experienced and willing to make herself useful. No. 959. a.

Wanted.—A girl or woman to do house work on a farm. Wages \$7 a month. Farm near Thornton Station. No. 960. a.

Farm for Sale.

For sale, 90 acre farm 1/2 mile from Petrolia. Good buildings; well

watered; good fences; also 100 quart milk route, bottles, etc. Good dairy farm. No. 961. a.

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 instruction to secretaries and other officers, general information about Institutes and Institute work, suggestions to delegates, etc. He will also from time to time review some of the published results of 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. G. CREELMAN,
Superintendent Farmers' Institutes

Annual Meetings

NAMES OF DELEGATES, TITLES OF ADDRESSES AND MEETINGS TO BE ATTENDED BY EACH DELEGATE.

The delegate whose name is at the head of each section will address the meetings in that section, and on such subject or subjects as may be selected by the local institute from among the list submitted.

In order that the speaker may arrive at the various places in time, the list of meetings has been arranged on the basis of an afternoon meeting only, commencing at 1.30 p. m. and ending at 6 p. m. In case an evening meeting can be held, and the delegate arrives at next place of meeting before 1.30 p.m. on the day advertised, an evening meeting may be arranged for if desired.

Section I.

Delegate—Prof. Lochhead, Agricultural College, Guelph.

Subjects.—"Fungous Diseases", "Fessian Fly", "Wheat Rust and How to Combat it", "Weeds and how to Destroy them."

Meetings.
Port Elgin, Bruce W..... June 4

Balmy Beach, Grey N..... June 5
Vandeleur, Grey C..... June 6
Shelburne, Dufferin..... June 7
Beeton, Simcoe, S..... June 9
Duntroon, Simcoe W..... June 10

Section II.

Delegate.—Prof. H. H. Dean, Agricultural College, Guelph.
Subjects.—"Dairying."
Meetings.

Weston, York, W..... June 11
Brampton, Peel..... June 12
Milton, Halton..... June 13

Section III.

Delegate.—Mr. Alex. MacNeill, Walkerville.

Subjects.—"Spraying for Insect and Fungous Diseases", "Apple Culture", "Modern Methods in Fruit Growing", "Packing and Shipping Fruit."
Meetings.

Dutton, Elgin W..... May 31
Appin, Middlesex W..... June 2
Preston, Waterloo S..... June 3
Clifford, Union..... June 4
Durham, Grey S..... June 5

Section IV.

Delegate.—Prof. J. W. Hart, Superintendent of Eastern Dairy School, Kingston.

Subjects.—"Dairying."
Meetings.

Campbellford, Northumberland E..... June 3
Lindsay, Victoria W..... June 4
Beaverton, Ontario N..... June 5
Omamee, Victoria E..... June 6
Agincourt, York E..... June 7

Section V.

Delegate.—Mr. Arch. Smith, Superintendent Western Dairy School, Strathroy.

Subjects.—"Dairying."
Meetings.

Kinlough, Bruce S..... June 3
Paisley, Bruce, C..... June 4

Women's Institutes

Section I.

Delegate.—Miss Agnes Smith, Hamilton.

Subjects.—"Principles of Cooking, (with simple demonstrations)", "Food in its relation to the body", "Domestic Science", "The Sanitary Home."
Meetings.

Clifford, Union..... June 4
Durham, Grey S..... June 6
Kemble, Grey N..... June 6
Shelburne, Dufferin..... June 7
Cookstown, Simcoe S..... June 9
Duntroon, Simcoe W..... June 10
Weston, York W..... June 11
Brampton, Peel..... June 12
Milton, Halton..... June 13

Section II.

Delegate.—Miss Laura Linton, Guelph.

Subjects.—"Principles of Cooking, (with simple demonstrations)", "Our Daily Bread", "Dairying on the Farm", "The Comfortable Home."
Meetings.

Omamee, Victoria E..... June 4
Agincourt, York E..... June 6

Alphabetical List of Farmers' Institutes, Giving Place and Date of Annual Meeting

Addington (not named)...	June	
Algoma C. Sault Ste.		
Marie.....	June	7
Algoma E., Sowerby.....	June	
Amherst I. (not named)...	June	17
Brant, N. St. George.....	May	31
Brant S., Brantford.....	May	31
Brockville, Lyn.....	June	18
Bruce, C. Paisley.....	June	4
Bruce, N. Wiarton.....	June	3
Bruce S., Kinlough.....	June	3
Bruce, W. Port Elgin.....	June	4
Carleton, Stittsville.....	June	10
Cornwall, Newington.....	June	3
Dufferin, Shelburne.....	June	7
Dundas, Winchester		
Springs.....	June	3
Durham, E. Millbrook.....	June	5
Durham, W. Bowmanville.....	June	7
Elgin E., Aylmer.....	June	7
Elgin W., Dutton.....	May	31
Essex N., South Woodlee.....	June	10
Essex S., Kingsville.....	June	
Frontenac, Kingston.....	June	12
Glenagarry, Alexandria.....	June	21
Grenville S., Spencerville.....	June	2
Grey C., Vandeulere.....	June	6
Grey N., Owen Sound		
(Balmy Beach).....	June	5
Grey S., Durham.....	June	5
Haldimand, Cayuga.....	June	8
Halton, Milton.....	June	13
Hastings E., Deseronto.....	June	
Hastings N., Madoc.....	June	
Hastings W., Oak Hill		
Lake.....	June	18
Huron S., Hensall.....	June	7
Huron E., Brussels.....	June	3
Huron W., Carlow.....	June	18
Kent E., Ridgetown.....	June	17
Kent W., Chatham.....	June	7
Lambton E., (not named)	June	
Lambton W., Bridgen.....	June	14
Lanark N., Almonte.....	June	21
Lanark S., Perth.....	June	20
Leeds N. & G., Merrick-		
ville.....	June	7
Leeds S., Newboro.....	June	3
Lennox, Napanee.....	June	7
Lincoln, St. Catharines...	June	3
Manitoulin E., Manita-		
waning.....	June	3
Manitoulin W., Gore Bay...	June	6
Middlesex E., London.....	June	3
Middlesex N., Ailsa Craig...	June	
Middlesex W., Appin.....	June	2
Monck, Wellandport.....	June	12
Muskoka C., Utterson.....	June	14
Port Carling & B., Port		
Carling.....	June	10
Nipissing W., North Bay...	June	13
Muskoka N., Huntsville...	June	2
Muskoka S., Bracebridge...	June	
Norfolk N., Waterford.....	June	3
Norfolk S., Vittoria.....	June	12
Northumberland E., Camp-		
bellford.....	June	3
Northumberland W., Co-		
bourg.....	June	10
Ontario N., Beaverton.....	June	5
Ontario S., Myrtle.....	June	3
Oxford N., (not named)	June	
Oxford S., Norwich.....	June	10
Parry Sound E., Burk's		
Falls.....	June	10
Parry Sound W., Parry		
Sound.....	June	7
Peel, Brampton.....	June	12
Perth N., Milverton.....	June	6
Perth S., (not named)	June	
Peterboro E., Norwood...	June	7
Peterboro W., Peterboro...	June	7
Prescott, Vankleek Hill		

Prince Edward, Picton.....	June	14
Renfrew N., Bachburg.....	June	12
Renfrew S., Renfrew.....	June	2
Russell, (not named)		
Simcoe C., Wyebridge (Chas.		
Rankin's Orchard).....	June	
Simcoe E., Orillia.....	June	5
Simcoe N., Beeton.....	June	9
Simcoe S., Duntroon.....	June	10
St. Joseph Is., Kentvale...	June	5
Stormont, Newington.....	June	2
St. Joseph Is., Kentvale...	June	5
Victoria E., Omemee.....	June	6
Victoria W., Lindsay.....	June	4
Waterloo N., Elmira.....	June	9
Waterloo S., Preston.....	June	3
Welland, Welland.....	June	20
Wellington C., (not named)		
Wellington E., Kenilworth...	June	10
Wellington S., Guelph.....	June	7
Wellington W., Drayton.....	June	7
Union, Clifford.....	June	14
Wentworth N., Freleton.....	June	7
Wentworth S., Vinemount...	June	
York E., Agincourt.....	June	7
York W., Weston.....	June	11
York N., Newmarket.....	June	5

Annual Meetings of Women's Institutes

Brant S., Burford.....	June	5
Bruce S., Kinlough.....	June	3
Bruce W., Port Elgin.....	June	11
Dufferin, Shelburne.....	June	7
Elgin E., Aylmer.....	June	19
Grey N., Kemble.....	June	6
Grey S., Durham.....	June	5
Halton, Milton.....	June	13
Hastings W., Oak Hill		
Lake.....	June	18
Huron E., Brussels.....	June	3
Huron W., Carlow.....	June	18
Kent E., Chatham.....	June	16
Kent W., Wheatley.....	June	17
Lincoln, Campden.....	June	17
Middlesex W., Strathroy...	June	18
Norfolk N., Waterford.....	June	21
Norfolk S., Vittoria.....	June	20
Ontario N., Beaverton.....	June	
Ontario S., Myrtle.....	June	3
Peel, Brampton.....	June	12
Simcoe S., Cookstown.....	June	9
Simcoe W., Duntroon.....	June	10
Victoria E., Omemee.....	June	6
Waterloo N., Winterbourne...	June	12
Union, Clifford.....	June	4
York E., Agincourt.....	June	7
York W., Weston.....	June	11

Spraying Demonstrations

Following up the series of pruning demonstrations, which were conducted under the auspices of the Ontario Fruit Growers' Association in April, Mr. G. C. Creelman, the secretary, has arranged with the Dominion Department of Agriculture for the services of three of their fruit inspectors to conduct demonstrations in orchards. These meetings will be under the auspices of the local fruit growers' association in each place, and the inspectors, namely, Mr. Alex. McNeill, of Walkerville, Mr. Elmer Lick, of Oshawa and Mr. P. J. Carey, of Cobourg, will be present and conduct the work and take part in discussing fruit subjects generally.

The following is a list of the places and dates arranged:—

Whitby.....	May	2.....	2 p. m.
Oshawa.....	"	3.....	2 p. m.
Bowmanville.....	"	5.....	2 p. m.
Orono.....	"	6.....9.30	a. m.
Newcastle.....	"	6.....	2 p. m.
Welcome.....	"	7.....9.30	a. m.

Garden Hill.....	"	7.....	2 p. m.
Coldsprings.....	"	8.....	2 p. m.
Grafton.....	"	9.....	9 a. m.
Wicklow.....	"	9.....	2 p. m.
Brighton.....	"	10.....	9 a. m.
(For Smithfield)			
Brighton.....	"	10.....	2 p. m.
Trenton.....	"	12.....	2 p. m.
Consecon.....	"	13.....9.30	a. m.
Picton.....	"	13.....	3 p. m.
Belleville.....	"	14.....	2 p. m.
Maitland.....	"	15.....	2 p. m.
Iroquois.....	"	16.....	2 p. m.
Hensall.....	"	9.....2.30	p. m.
Clinton.....	"	10.....2.30	p. m.
Blyth.....	"	13.....2.30	p. m.
Lucknow.....	"	12.....2.30	p. m.
Port Elgin.....	"	14.....2.30	p. m.
Walkerton.....	"	15.....2.30	p. m.
Meaford.....	"	20.....	2 p. m.
Clarksburg.....	"	21.....	2 p. m.
Collingwood.....	"	22.....	2 p. m.
Stavner.....	"	23.....	2 p. m.
Creemore.....	"	26.....	2 p. m.
Mulmer.....	"	27.....	2 p. m.

Education in Dairying

Synopsis of Address Delivered by G. C. Creelman, at the Dairy Conference, Ottawa, April 29th, 1902.

The subject of this address would indicate that dairymen require special education. Why should this be so? Take for instance the factors in the production of good butter. The cow produces the milk, the cream rises of its own accord, the churning is purely a mechanical process, the washing is simply removing particles of milk that cling to the granules of butter, and salting and making into prints or packing into tubs is only a matter of mechanical skill, acquired by practice. To the layman therefore, it would appear at first glance that anyone with cleanly habits and a few mechanical appliances could make butter of the first quality. Following the same argument further, all persons of cleanly habits and using the same utensils should make butter of the same general quality.

Everyone of you know that these facts are not borne out in practice. The breed of cows, the individual animal characteristics, the length of time in milk, the age of the animal, suitable surroundings, the quality and quantity of food, nature of the water, the regularity of milking, character of the milk, condition of utensils, handling of the milk, temperature of the dairy, handling of cream, frequency of churning, the mechanical construction of the churn and of the butter worker, kind of water used in washing, quality and quantity of salt, and the appearance of the package are some of the factors that have got to be reckoned with in the manufacture of first-class butter.

The same conditions to a greater or less extent, apply to the manufacture of cheese, so I think we need have no hesitation in saying that the dairymen requires to be educated, if we may not indeed go further and say that he requires a particularly good education along special lines, if he is to be successful in his business.

THE MAKER.

There was a time in this country when the butter or cheese maker could produce a fairly good article under somewhat crude conditions, viz., when factories were new and the surroundings clean and wholesome, when only a small amount was manufactured at a time and practically every step taken was by one man when the food of the cows consisted almost entirely of grass; when a good article was comparatively scarce, and when people were not educated to discriminate so closely between "good" and "fairly good".

At present the factory man has not these conditions, and science has thrown so much light on the whole question that the maker is forced to acquire a scientific knowledge of his business, in addition to the practical, mechanical details.

ESSENTIAL TO SUCCESS.

Reading, thinking and close observation are absolutely necessary now for a liberal education in any kind of work. Knowledge by means of the first of these agencies may now be obtained by everyone. Our colleges and experiment stations have special corps of instructors working along the lines of improving our dairy methods, and the results of their labors are scattered broadcast and within the reach of all. By means of the printing press the observations of successful, practical dairymen throughout the world are given us in the form of books and pamphlets. Agricultural journals, and even our country newspapers, now fill their columns with good, practical reading matter, useful to everyone in the business.

The second essential to success is that the individual must think, after he has read widely, and use his own brains and apply such information as he has received through books to the needs of his own particular case.

The third point, the matter of close observation, is probably the most important of all, for it is noting carefully and making mental comparisons of the little things that count after all. Fortunately in this country we are situated so that there is no excuse for any of our makers not having a chance of observing closely and even extensively the work of other men in the same business.

At any of our dairy schools, where the courses are so arranged as not to interfere with the season's work at any of our factories, the maker may meet with scores of others situated similarly to himself, and talk over difficulties with them, and observe their methods of work. By close attention to the way in which the best men go about the details of their work he can gain a very intimate knowledge of the best methods in vogue.

FARMERS' RESPONSIBILITY.

In the Province of Ontario on July 1st, there were reported to be 984,012 milk cows, nearly one million animals. These of course

include some very good ones, a number of fair milkers, and a great number that are not paying for the feed consumed. If you, gentlemen, who are the leaders of thought and action in this great dairy industry in Canada to-day, could increase the yield per cow one thousand pounds per year, look what a vast amount would be added to the dairy produce of the country. I am not informed as to the actual conditions that prevail in other provinces, but I presume improvements could be made there as well, and I ask you in discussing this question to give the meeting your latest information as to how improvement, in your judgment, may be made in the quantity of milk from every one of our cows.

THE FARMERS REQUIRE INDIVIDUAL INSTRUCTION

The quantity of milk is not the only thing to be considered, of course, but in a short talk of this kind, it is only possible to touch here and there and I shall have to group matters of the production, care and handling of milk together, and refer for a moment to the necessity for individual instruction among the farmers.

We have tried through the Farmers' Institute system to interest, along general lines, the men who feed the cows. We have used charts, giving the composition and digestibility of the ordinary stock feeds. We have taken models of silos and pointed out how to construct same. We have told how far apart corn should be planted in the row; how much cultivation is required; at what stage the corn should be cut; the process of filling the silo; the value of the silage as food, and how much grain should be fed with it in order to make a balanced ration. We have told the difference in feeding value of clover and timothy hay; the necessity for better stables; the advantages of a water supply being in the buildings, and the bad effects of the cows having to go long distances in the snow in severe weather for water; the value of roots as food, and a hundred other topics. We feel that we have done some good in this way, and yet we cannot help but think that after all it is a good deal like a physician trying to prescribe for a patient over the telephone. We realize that the Winter Fair has grown so rapidly in popularity because of the educational features which have been added; because the animals themselves are there for the purpose of illustration; because the animals are judged alive, immediately slaughtered and judged again in the carcass. Such things directly impress a man and we feel that we have got to do more demonstrating at our Institute meetings in future.

A number of the Farmers' Institutes will this year hold their annual meetings in cheese factories, and we hope that the mingling together of the maker and the patrons will be beneficial to both. The individual instruction spoken of a moment ago, I feel can be carried

NEW BOOKS

FOR THE

Business Farmer

Animal Breeding. By Thomas Shaw, Professor of Animal Husbandry at the University of Minnesota. Author of *The Study of Breeds, Forage Crops Other Than Grasses, Soiling Crops and the Silo, etc.*

This book is, beyond all comparison, the most complete and comprehensive work ever published on the subject of which it treats. It is the first book of the kind ever given to the world which has systematized the subject of animal breeding. It includes thirty chapters, each of which treats of some particular phase of the subject. Illustrated, substantially and handsomely bound in cloth, 5 by 7 inches, 405 pp. Price, postpaid, \$1.50. One new subscription to *THE FARMING WORLD* and "Animal Breeding," both for \$2.00.

The Study of Breeds. By Professor Thomas Shaw.

Origin, history, distribution, characteristics, adaptability, uses, and standards of excellence, of all the pedigreed breeds of cattle, sheep and swine in America. The accepted text book in colleges, and the authority for farmers and breeders. 312 pages, 12 mo., 5 by 8 inches, 60 full page plates. Price, postpaid, \$1.50. One new subscription to *THE FARMING WORLD* and "The Study of Breeds," both for \$2.00.

Soiling Crops and The Silo. By Professor Thomas Shaw.

The growing and feeding of all kinds of soiling crops, conditions to which they are adapted, their plan in the rotation, etc. Not a line is repeated from the *Forage Crop Book*. Best methods of building the silo, filling it and feeding ensilage. Illustrated, 12mo., 5 by 8 inches, 364 pages. Price, \$1.00. One new subscription to *THE FARMING WORLD* and "Soiling Crops and the Silo," both for \$2.00.

Forage Crops Other Than Grasses. By Professor Thomas Shaw.

How to cultivate, harvest and use them. Indian corn, sorghum, clover, leguminous plants, roots of the brassica genus, the cereals, miller, field roots, etc. Intensely practical and reliable. 286 pages, illustrated, 12 mo., 5 by 8 inches. Price, \$1.00. One new subscription to *THE FARMING WORLD* and "Forage Crops Other Than Grasses," both for \$1.70.

Milk and Its Products. By Henry H. Wing, Professor of Dairy Husbandry in the Cornell University.

A treatise upon the nature and qualities of dairy milk, and the manufacture of butter and cheese. 12mo, cloth, Price, \$1.00. One new subscription to *THE FARMING WORLD* and "Milk and Its Products," both for \$1.70.

Fruit. A Practical Guide to the Picking, Storing, Shipping and Marketing of Fruit.

The subject has been treated strictly from the standpoint of the fruit producer. The commission business, for instance, is thoroughly and fairly discussed, and the commission men can hardly help but be pleased with the advice given, yet it is all plainly directed to the benefit of the fruit grower. Evaporating and canning are handled the same way, by telling how to run a canning factory or a commercial evaporator—but by explaining those points which are of interest to the man who grows the fruit. The whole subject is tersely, plainly put and adequately illustrated. It is a book which every one can read and enjoy, and which no fruit grower, large or small, can do without. Illustrated, 5 by 7 inches, pp. 250. Cloth, price postpaid, \$1.00. One new subscription to *THE FARMING WORLD* and "Fruit," both for \$1.70.

Cabbage, Cauliflower and Allied Vegetables, from Seed to Harvest. By C. L. Allen.

A practical treatise on the various types and varieties of cabbage, cauliflower, broccoli, Brussels sprouts, kale, collards and kohlrabi. An explanation is given of the requirements, conditions, cultivation and general management pertaining to the entire cabbage group. After this, each class is treated separately and in detail. The chapter on seed raising is probably the most authoritative treatise on this subject ever published. Insects and fungi attacks on all classes of vegetables are given due attention. 60 cents. One new subscription to *THE FARMING WORLD* and "Cabbage, Cauliflower and Allied Vegetables, from Seed to Harvest," both for \$1.25.

Prize Gardening. How to Derive Profit, Pleasure, Health, from the Garden. Compiled by G. Burnap Fiske.

Five thousand gardeners all over America kept a daily record of the methods and results for a whole season, and reported thereon fully in competition for many and large prizes. They represented all grades from the small amateur to the professional market gardener. This unique book summarizes the most useful of all this experience. Illustrated with many charts, sketches, etc., from original photos, 323 pages, 5 by 7 inches, bound in cloth. Price, \$1.00, postpaid. One new subscription to *THE FARMING WORLD* and "Prize Gardening," both for \$1.70.

ADDRESS—
THE FARMING WORLD
Conf Life Building, Toronto.

out in dairy matters now better than probably any other class of agricultural work. Instructors have already been appointed to visit the factories during the time they are in active operation. Why then should they not meet the patrons at the same time?

RESPONSIBILITY OF PATRONS.

It ought to be the aim and object of every patron to send the very best kind of milk to the factory, and yet it must be admitted that there are some men in nearly every locality who do not feel their responsibility in this respect. There are men who would apparently not stoop to do a mean act; men whose word is supposed to be as good as their bond, and yet we find these same men will keep back cream for table use, and will deliberately set some of the milk for cream, if they have company at the house and send the balance to the factory, without saying anything about it, in fact hoping to escape unnoticed. It might be said that the men who would do this could not be helped by instruction. This I do not believe. I do not think such men realize that they are hurting the trade of the factory and causing their honest neighbors to get poorer returns than they should. If all patrons could meet the instructors at the factory and afterwards as far as possible in their homes, it would go a long way toward clearing up many of the superstitions and fallacies which exist in the minds of many farmers in reference to what goes on in the factory. There are no doubt thousands of farmers in this country who are sending unclean milk to the factories, who do not really know what is going on in their own stables. The milk and handling of it is often left to incompetent persons who are not as careful with the cans, or pails and other utensils as they should be. If these men were visited by the instructor it might lead to their giving more personal attention to the details of this branch of their work.

MODEL DISTRICTS

The Ontario Department of Agriculture has this year made arrange-

\$50 Round Trip to California

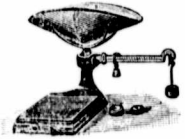
Chicago & North-Western R'y from Chicago, May 27-June 8. The New Overland Limited, the luxurious every day train, leaves Chicago 8.00 p. m. Only three days en route. Unrivalled scenery. Variable routes. New Drawing Room Sleeping Cars and Compartment Cars, Observation Cars (with telephone). All meals in Dining Cars. Buffet Library Cars (with barber). Electric lighted throughout. Two other fast trains 10.00 a. m. and 11.30 p. m. daily. The best of everything. Daily and personally conducted tourist car excursion to California, Oregon and Washington. Apply to your nearest ticket agent or address.

ments to try the experiment of giving the entire time of one instructor to a few factories. It is intended to have meetings of the patrons in their factories at least once a month. The instructors are going to give the maker in each factory as much time as in his judgment is necessary to remedy

any evils that may exist in the factory. In addition to this the instructors will visit a number of farmers in each section with a view to improving the quality of milk received. In this way it is hoped that we may at least locate the evil spirit that seems to hover over the cheese vats in Ontario.

Scales FOR EVERY PURPOSE
SPECIAL PRICES
EASY TERMS

By a special arrangement with one of the oldest and most reliable scale manufacturers in Canada we are able to furnish Dairymen, Stockmen and others with Scales of any style or capacity at exceptionally close prices, and on small monthly payments. This arrangement has been made in the interest of the readers of THE FARMING WORLD, and no special inducements can be offered to anyone whose subscription is not paid in advance.



Family Scale
Half Ounce to 240 Pounds



1-2 Ounce to 20 lbs

- 600 lbs.
- 1,000 "
- 1,200 "
- 2,000 "
- 3,000 "



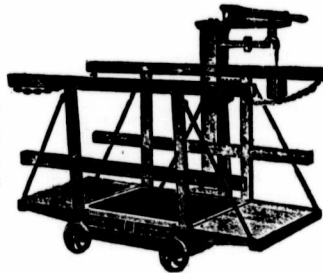
Dairy Scale

Household Scale

Cheap, convenient, and accurate, capacity 12 lbs, no loose weights, requires no table room, always ready for use.

The Live Stock Scales

have a capacity of from one pound up to 4,000 pounds



Government Inspection Certificate forwarded with each Scale.

If you need a Scale, large or small, for any purpose, fill out the following blank and mail to us. We can save you money. Anyway it won't cost you anything to get our terms:—

THE FARMING WORLD,

Confederation Life Building, TORONTO.

Please send me particulars, price, terms, etc., for a Scale which will weigh about..... lbs., and suitable for weighing.....

NAME.....

P O

It is understood that this is not an order.

The Farm Home

Spring Cleaning.

Yes, clean your house and clean your shed,
 And clean your barn in every part;
 But brush the cobwebs from your head,
 And sweep the snowbanks from your heart.
 Yes, when Spring cleaning comes around,
 Bring forth the duster and the broom;
 But rake your foggy notions down,
 And sweep your dusty soul of Gloom.

Sweep old ideas with the dust,
 And dress your soul in newer style;
 Scrape from your mind its worn-out crust,
 And dump it in the rubbish pile.
 Sweep out the hates that burn and smart,
 Bring in new love, serene and pure;
 Around the hearthstone of thy heart
 Place modern styles of furniture.

Clean out the brain's deep rubbish Hole,
 Soak every cranny, great and small,
 And in the front room of the soul
 Hang prettier pictures on the wall.

Scrub up the windows of the mind,
 Clean up, and let the Spring begin;
 Swing open wide the dusty blind
 And let the Springtime sunshine in.

Plant flowers in the soul's front yard,
 Set out new shade and blossom trees,
 And let the soul, once frozen hard,
 Sprout crocuses of new ideas.

Yes, clean your house, and clean your shed,
 And clean your barn in every part;
 But brush the cobwebs from your head,
 And sweep the snowbanks from your heart.

The Sick Room.

Although "prevention is better than cure," and the majority of ailments can be avoided, yet every house should be provided with a room in which a sick person can have the greatest possible attention with the least possible labor. If the house mother must also act as sick nurse, the room should be situated in close proximity to the kitchen and yet sufficiently separated from it so that sounds and odors may not penetrate.

The room should have windows that will admit the disinfecting sunlight into every corner and yet the bed should be so placed that the patient's eyes are not facing

the strong light. There should be windows that will open so that fresh air may be admitted at all hours of the day and night without a direct breeze striking the patient. If the room contains a fireplace, so much the better.

Sometimes one is not so ill as to require constant attention, yet the worker in some other room cannot read the patient's mind, and, consequently, comes often to inquire, thus depriving herself and patient of repose. This might be obviated if an ordinary sleigh-bell were hung in the kitchen or work-room and a cord run through door frames, etc., to reach the patient's hand. The attendant could work contentedly, knowing she was not neglecting the sick one, while he, in turn, would not be disturbed unnecessarily.

There are many times a patient could wait on himself were articles placed handy. A basket or bag hung within reach of the hand, might contain a bottle of water or milk which keeps fresh longer if securely corked from the air of the room and a bunch of lemonade straws will be a more satisfactory method of drinking without the patient needing to lift his head, than is even the best sick-room jug. If the patient is able to read, yet not strong enough to hold a book, an adjustable book rest is just the thing. He need then only turn the leaves. A bouquet of his favorite flowers may always be placed where his eyes can rest on them, but care must be taken not to introduce any that have a strong, heavy, no matter how sweet, odor.

A restful landscape may safely hang on the walls at the foot of the bed, but at such a height that there is no strain on the mind or eyes while looking at it. But on no account should the walls be papered in showy colors with intricate patterns. Who of us has not traced and counted and worked out designs in wall paper while imprisoned where we could not escape its hateful tones? Pale, quiet shades should be chosen, and if a pattern is desirable, then it should only be occasional sprigs of a pretty flower. Walls, ceiling and woodwork should be in perfectly harmonizing shades. Though the patient may not know the reason, yet these little matters have a hurtful effect. Drapery and dust, or germ catchers, should be entirely excluded. The floors should not be carpeted, yet there must be something to deaden the sound of foot falls.

In serious illnesses, visitors should be excluded, and at any time, only those should be admitted whom the patient is, not simply submitting to see, but those whom he is really desirous of seeing.

Rest, fresh air, sunlight and plenty of pure water are nature's remedies. Let us not exclude any

of these from the sick-room, and when we require a doctor, let us follow exactly his directions, and pay no attention to the thousand and one remedies prescribed by all who have had a similar or dissimilar disease.

M. E. Graham.

North Muskoka Women's Institute.

A pleasant afternoon was spent on May 3rd, by the members and friends of the Women's Institute.

The president did not occupy the chair for the best of reasons, but an address prepared by her was read by the secretary, the subject being, "A Convenient Kitchen". She emphasized the advantage of having the kitchen floor on a level with the dining room. The steps so often seen between dining-room and kitchen bear witness to a great waste of feminine energy and also to masculine stupidity. Another important item is the seldom seen sink. On farms where the waste water can be used to good advantage it can be carried by a pipe to a barrel sunk in the ground some distance away. It is neither difficult nor expensive to have a kitchen neatly and properly finished and since so much of a woman's life is spent there it should, of all rooms, be comfortable and well-lighted. A small table on castors, the top level with the top of the stove, a shelf beneath, both covered with zinc, can be moved close to the stove and hot pans and dishes put on it, thus saving many steps. All utensils should be kept as near as possible to where they will be needed.

The keynote of Miss Shea's excellent address on "Training Children at Home and at School," was given in the opening lines:—"Blessed are they who do hunger and thirst after the knowledge of how to direct, instead of suppressing the spontaneous activity of childhood for they will make happy and competent and virtuous children". To gain their confidence it is necessary to trust them, let them see that you expect the best and not the worst from them. Remember that they are sensitive and deal gently with them. Never break a promise with them. Don't give them a lamb, a calf or a colt and then keep the money when that animal is sold. Don't bring up children with the settled conviction that there is no money in farming. Too many children have to leave the farm to handle their first dollar.

A good teacher will always establish confidence between herself and the children by trusting them to do their best. Parents should always teach the children to respect and obey the teacher if they desire

Lever's Y-Z (Wise Head) Disinfectant Soap Powder dusted in the bath softens the water at the same time that it disinfects. 16

good results. Obedience, punctuality, truthfulness and neatness are virtues, in the instilling of which parents and teachers bear equal responsibility.

The addresses were heartily endorsed and discussed by those present. The chief object of the Institute is to induce discussion; to get each one to tell what they have learned by experience. We all know that getting knowledge by experience is expensive, so why should we not share with others that which will make them richer and ourselves no poorer.

A. Hollingworth,
Secretary.

Sugar as Food.

It would be interesting to know how much of the popular notion that sugar is injurious has been due to the Puritan idea that anything that gave pleasure was necessarily bad and was therefore to be avoided. Be that as it may, there seem to be good reasons to believe that there is a physiological basis for children's fondness for sugar. It seems to be fairly well demonstrated that wherever persons are called upon to exert themselves severely, sugar will at least mitigate the fatigue which results. It has been found that where fatigue comes on after five or six hours' work, the eating of sugar will in a measure relieve the fatigue. It has also been found in the German army that soldiers who were given sugar in addition to their other ration stood the fatigues of forced march much better than those who were similarly fed except as to the extra allowance of sugar. Children being exceedingly active and less able to digest the coarser foods find sugar especially adapted to their needs and consequently crave it.

Good, pure, home-made candies, when taken in moderation, are not only a source of pleasure to the children but a source of real and often needed food. That sugar may be injurious cannot be denied. Sugar is not injurious, however, on account of its badness but on account of its superlative goodness. It is so easily digested that when eaten in a concentrated form it may overload the system. If it was an inert, indigestible substance it might be eaten with impunity. Nature seems to have provided for this difficulty by having sugar al-

ways occur under natural conditions in a dilute form.

Thos. F. Hunt.
Ohio State University.

Hints by May Manton.

Fancy Blouse 4112.

Fancy blouses with square neck effects, are among the latest novelties shown and are charming, both for odd bodices and entire gowns. This stylish model is novel and at the same time simple of construction. As shown it is of white crepe de Chine with trimming of cream lace and full gathered chemisette and collar of chiffon, but is appropriate to all soft wools, silks and cotton fabrics. The sleeves are peculiarly chic and graceful and are among the most becoming that the season has to offer.

The lining is smooth-cut and closes at the centre front. The back of the waist proper is tucked



4112 Fancy Blouse,
32 to 40 bust.

from shoulders to belt on lines that give a tapering effect to the figure, but the fronts are tucked to yoke depth only and fall in soft folds over the bust to blouse stylishly. The chemisette is soft and full and hooks over with the right front to close invisibly beneath the trimming. The sleeves are laid in inverted tucks at their upper portions but form soft full puffs below the elbows and are gathered into deep cuffs. The collar is finished separately and closed invisibly at the centre back.

To cut the waist in the medium size $3\frac{1}{2}$ yards of material 21 inches wide, $3\frac{1}{4}$ yards 27 inches wide, $2\frac{1}{2}$ yards 32 inches wide or $1\frac{1}{4}$ yards 44 inches wide will be required with $\frac{3}{8}$ yards of chiffon for square and collar and $2\frac{1}{2}$ yards of lace to trim as illustrated.

The pattern 4112 is cut in sizes for a 32, 34, 36, 38 and 40 inch bust measure.

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

Entertaining Guests.

Among influences that mould and refine the young persons of the household is the entertaining of welcome guests. Those accustomed to the presence of visitors usually have more pleasing manners, are more at their ease and are consequently more graceful and tactful than those who have not this advantage. Entertaining visitors unifies a family, all being pledged to the same end—the gratification of the guest.—Ladies' Home Journal.

Sweeping in Italy seems to be considered a man's work. Even when there are women chambermaids, the men sweep and dust the rooms. Not but that the poor women do hard work enough. Their sphere in Italy and France and Germany includes heavy field work as well as household work.—Exchange.

A neighbor said to a Scotch woman one day, "Effie, I wonder how ye can sleep wi' sae muckle debt on your head." To which Effie quietly answered, "I can sleep fu' weel, but I wonder they can sleep that true me."—Current Literature.

CHEESEMAKER WANTED

At once—person of good character, having had one or two seasons' experience, and who would be capable of taking charge in case of absence of manager. Address J. R. Hutchison, St. George, Ont.

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If you are thinking of going out to the Pacific coast, try British Columbia. A delightful climate, no extremes of temperature, fertile land, ample rainfall, heavy crops, rapid growth, and splendid market for everything you raise at good prices. The celebrated valley of the Lower Fraser River is the garden of the province. Write for farm pamphlet telling you all about it and containing a descriptive list of farms for sale. The Settlers' Association of B.C., Box 540, Vancouver, B.C.

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Poetry and Rhyme

Live in the Sunshine.

Live in the sunshine, don't live in the gloom,
Carry some gladness the world to illume.

Live in the brightness, and take this to heart,
The world will be gayer if you'll do your part.

Live on the housetop, not down in the cell;
Open-air Christians live nobly and well.

Live where the joys are, and, scorn-ing defeat,
Have a good morrow for all whom you meet.

Live as the victor, and triumphing go
Through the queer world, beating down every foe.

Live in the sunshine, God meant it for you!
Live as the robins and sing the day through.
—Margaret E. Sangster, in Every-where.

Ben Bolt

The death occurred in New York a few days ago of Dr. Thomas Dunn English, who had gained considerable prominence as the composer of the pathetic poem 'Ben Bolt,' which has had very great popularity.

Don't you remember sweet Alice,
Ben Bolt—
Sweet Alice whose hair was so brown,
Who wept with delight when you gave her a smile
And trembled with fear at your frown?
In the old churchyard in the valley,
Ben Bolt,
In a corner obscure and alone,
They have fitted a slab of the granite so gray,
And Alice lies under the stone.

Under the hickory tree, Ben Bolt,
Which stood at the foot of the hill,
Together we've lain in the noonday shade,
And listened to Appleton's mill.
The mill-wheel has fallen to pieces,
Ben Bolt,
The rafters have tumbled in,
And a quiet which crawls round the walls as you gaze
Has followed the olden din.

Do you mind of the cabin of logs,
Ben Bolt,
At the end of the pathless wood,
And the buttonball tree with its motley limbs,
Which nigh by the doorstep stood?
The cabin to ruin has gone Ben Bolt,
The tree you would seek for in vain;
And where once the lords of the forest waved
Are grass and the golden grain.

And don't you remember the school
Ben Bolt,
With the master so cruel and grim,
And the shaded nook in the run-ning brook
Where the children went to swim?
Grass grows on the master's grave,
Ben Bolt,
The spring of the brook is dry,
And of all the boys who were schoolmates then
There are only you and I.

There is change in the things I loved,
Ben Bolt,
They have changed from the old to the new;
But I feel in the deepest of my spirit the truth,
There never was change in you.
Twelvemonths twenty have passed,
Ben Bolt,
Since first we were friends—yet I hail
Your presence a blessing, your friendship a truth,
Ben Bolt of the salt sea gale.

Nothing New

There's nothing new in politics,
There's nothing new in art;
The Chinese say they knew it all
Before we got a start.

And men who view the pyramids
And travel at their ease
Declare that the Egyptians were
Ahead of the Chinese.

Each little jest that one essays,
Each passing verbal trick,
Is very likely to be found
On some Assyrian brick.

But why pursue the doleful theme,
Since no relief we view?
There's nothing new in telling men
That there is nothing new.
—Washington Star.

As Johnny Looks At It

Ma's a vegetarian,
Pa's a faith-curist,
Uncle John he says he's an Anti-Impervulist,
Sister Sue's a Wagner crank,
Brother Bill plays golf,
Gran'pa tells what he takes
Fer to cure his cough.
Cousin Jen writes poetry—
Tells us what she's wrote—
Aunt Lavinia always claims
Wimmin ought to vote.
I go out in the backyard
Soon as they commence,
Me'en my dog's th' only ones
What's got anv sense.
—Baltimore American.

Once, in thy father's arms, a new-born child,
Thou didst but weep, while all around thee smiled;
So live that, sinking to thy last long sleep,
Thou mayest smile, while all around thee weep.
—Edwin Henry Keen, in the Outlook.

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A PAPER FOR FARMERS AND STOCKMEN.

D. T. McAINSH, — — — PUBLISHER.
J. W. WHEATON, B. A. — — — EDITOR.

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QUESTIONS AND ANSWERS

Machines for Spreading Lime

If J. W. F., who asked the question a few weeks ago in regard to machines for spreading lime, will correspond with Mr. E. F. Flack, Creemore, Ont., he will hear of such a machine that has been in use in that locality.

To Test Fertile and Unfertile Eggs

A subscriber at Lachine Locks, Que., asks for a method for testing fertile and unfertile eggs. Mr. W. R. Graham, manager of the Poultry Department, Ontario Agricultural College, answers this question as follows:

In answer to question from your Quebec correspondent, I may say that it is very easy to test eggs, if the operation is undertaken after dark. All that is necessary is to have an ordinary lamp or lantern and a piece of dark cloth of sufficient size to cover the entire globe or chimney. It is also necessary to have a small hole, about the size of an egg, in it exactly opposite the blaze of the lamp. If your subscriber will now take this lamp or lantern to the nests where the hens are set, or to the incubator, and lift the eggs from the nest or tray in exactly the same position as they lie, he will find that those which are fertile will be dark when held to the lamp, especially the up-

per portion. Whether these eggs are very dark, or only slightly so, will be dependent upon the stage or age of the incubation. For instance at 8 or 9 days after being incubated, he will find that the upper portion of the egg will be practically all dark, if fertile, and the lower portion clear. On the 16th day, he would find in all probability the egg would be dark in all parts, both upper and lower portion. An unfertile egg will be perfectly clear, except the yolk, which will be visible through the shell, especially is this so with a white shelled egg. This is easily distinguished, however, from the growth of the germ.

If your subscriber has many eggs to test, I would advise him to get a testing lamp from either Mr. Daniels in Toronto, or Mr. Morgan, in London. These testers are simply chimneys fitted to an ordinary lamp. Generally speaking, the chimney is made of tin, with a portion, about the size of an egg exactly opposite the blaze fitted with a piece of mica, with a small round tube extending from it. The eggs to be tested are then held up to the aperture. The tin reflects more or less of the blaze; and, in this way, you can see clearly the stage and development of the germ.

Guernseys at the Pan-American

A short time ago we published a tabulated statement sent us by the Secretary of the American Holstein-Friesian Association, showing the standing of that breed in the Pan-American dairy test. Since then we have received a somewhat lengthy statement showing the standing of the Guernseys in that test from the Secretary of the American Guernsey Cattle Club, in part, says:

"As representing the Guernsey, we do not wish to claim or place before the public anything which does not rightly belong to us. We acknowledge that the Holstein-Friesian not only showed a greater profit than the Guernsey in the production of milk, but the public will, and the friends of the Holstein must from the official records acknowledge that the Guernseys made a greater profit on butter production.

"Now what of the results. At the closing the records were carefully gone over and checked up by those who had them in charge, and Mr. Converse, the superintendent of Live Stock, issued the following announcement:

"I hereby announce the awards in the Breed Test in the Model Dairy as follows:

"The prize for net profit in butter fat is won by the Guernseys by a net profit of \$4.66.

"The prize for net profit in churned butter is won by the Guernseys by a net profit of \$5.86.

"The prize for net profit in total solids is won by the Holsteins by a net profit of \$26.44

"The profit in total solids and gain in live weight is won by the

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Scours.

A writer, in a recent issue of The Maritime Farmer, in a good article under the heading "Skim Milk Calves," says: "The greatest difficulty in raising calves is undoubtedly scours. Here, as elsewhere, 'An ounce of prevention is worth a pound of cure.' The principal causes are overfeeding, feeding sour milk, grain with milk, dirty milk pails, unwholesome feed boxes and irregularity of feeding." Now, the remedy, so far as these three last causes are concerned, is so apparent as not to need further consideration, and to put the thing more clearly, and at the same time get at the true root of the matter, let us begin in this way.

The feeding of sour milk, cold milk and grain with milk are the principal causes of indigestion, and indigestion is the true cause of scours. This view of the case simplifies matters inasmuch as it shows us that by, in some way, enabling the calf to thoroughly assimilate and digest its food, "the greatest difficulty in raising calves" may be overcome. Herbageum works along this line, and many practical feeders claim that by feeding it they secure perfect digestion of skim milk sweet, sour or cold, and that by this means the great difficulty of scours is overcome. We quote here from a practical Halton county farmer, William S. Savage, who lives near Oakville, Ont. He writes as follows: "I have used Herbageum and find it productive of good results, especially with calves and small pigs. When feeding with skim milk to calves, it seemed to prevent all scouring, which often occurs under other circumstances." Mr. Brownlee, of Feversham, Ont., in speaking of this matter, said: "Herbageum excels anything I have ever known for calves troubled with scours."

So many practical men have tested the value of Herbageum for this and other purposes, and have reported favorable results, that there is no longer room for doubt, and consequently Herbageum has, on its merits, taken a prominent place among the staples of the Canadian retail trade.

If not for sale in your town, it would be well to write the manufacturers—The Beaver Manufacturing Co., Galt, Ontario, Canada.

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drawing from the results of the experiments any conclusions as to the risk of infection in the opposite direction—namely, from cattle to man. And yet if there is very slight risk in the one case why should there be any greater risk in the other.

Making Baby Beef.

The experiments to determine the advisability of feeding a heavy ration from birth to block have been carried on for two years and the statements of the different lots used in the experiment first incepted are as follows. What might be called the full fattening ration lot, or the steers fed off as baby beef, being taken first.

The foods fed were charged at current market prices. There were five steers in the lot which weighed 750 pounds on the 14th of May, 1900. Their weight when slaughtered on the 15th of March, 1902, at the age of 22 months, was 6,500 pounds, or an average of 1,300 pounds. The average gain per steer during that period of 669 days was 1,150 pounds, making the average daily gain 1.72 pounds. The cost of production per pound of gain with this lot during the entire period of their lives was \$4.47, making a gross cost of \$256.78 to feed the lot. The steers sold for \$357.74 or an average of \$71.55, leaving a profit of \$101.00 on the five steers; or valuing the calves at \$5 each, leaving a profit of \$76 on the five.

A limited growing ration lot of steers were fed on the same feed as the first lot, but these after the first six months got no meal from the end of that time to the middle of March, had been fed on corn, ensilage, roots and hay. There were five in the lot and their weight at the beginning was 595 pounds and on the 15th of March was 4,665 pounds, an average of 933 pounds, or an average gain of 814 lbs. per steer. These steers gained from birth to the 15th of March at the rate of 1.21 pounds per diem, which gain cost at the rate of \$3.31 per 100 lbs. They were worth on the 15th of March \$177.28, and had cost to feed up to that time \$134.67, leaving a profit of \$42.65 on the lot, or valuing the calves at \$5 each, a net profit of \$17.65—J. H. Grisdale, Agriculturist, Central Experimental Farm, before the Agricultural Committee, Ottawa.

More and More.

The use of good mowers has become so general that the demand for these mowers is increasing more and more. The demand for more and more O. K. mowers is so great as to tax to the utmost the great mower producing facilities of the World-Centre works. Call on the nearest agent and inspect the McCormick line of grass cutters. It is the O. K. line.

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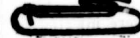
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Pat. Jan. 16, 1900



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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 best suited to our advertising columns.

Cattle.

The beef breeds have not been the only cattle that have sold well under the hammer of late. The secretary of the American Guernsey Cattle Club sends us particulars of two sales of Guernseys, one in Pennsylvania, and the other in Maryland. At the former seventeen head, comprising eleven cows, four young heifers and three young bulls, average \$180 each and at the latter ten cows, three heifers, three bull calves, one yearling and one two year-old bull, nineteen head in all averaged \$143 each. He also reports two official records of Guernsey cows as follows:

Beauty of Belle Vernon, No. 13260, owned by the Belle Vernon Farms Dairy Co., of Willoughby, Ohio, gave in seven days 279.2 lbs. milk, which by the Babcock test showed 11.80 lbs. butter fat. This test was supervised by a representative of the Ohio Agricultural Experiment Station.

The first cow to complete her year's record is Procris of Paxtang, No. 8722. During the summer her work was supervised at the Pan American Model Dairy, and since then by the Maryland Agricultural Experiment Station. She is owned by S. M. Shoemaker, Stevenson, Md. Being over 5 years old her requirement for admission to the Advanced Register was 10,000 lbs. milk and 360 lbs. butter fat. She exceeded both requirements giving 10,542.72 lbs. milk and 506.56 lbs. butter fat.

Mr. John Cochrane, Nethercraig, Kilmarnock, shipped last week a very nice lot of seven Ayrshire cattle to Mr. G. H. Yeaton, of Hollingsford, Boston. The draft consisted of six females and one bull, and were purchased from the following breeders:—Mr. Robert Woodburn, jun., Whitehill, Hulford, a two-year-old heifer; Mr. Woodburn, Holehouse, Galston, two two-year-old heifers and a yearling bull; and Mr. David Gray, Barmoorhill, two two-year-old heifers. The other female, a yearling heifer, came from Mr. Cochrane's own herd at Nethercraig. All the animals were descended from reliable milking strains, and are likely to give every satisfaction to their new owner. Mr. Cochrane has several other important foreign commissions on hand for Ayrshires.

The very promising young Aberdeen-Angus bull Prince Lorgie, 19690, has just been despatched from Sir George Macpherson-Grant's herd to the order of Mr. H. W. Elliott, Estill, Missouri, U.S.A. Prince Lorgie is particularly well bred, having for sire the 300-guinea bull Bion, 11454, while his dam, Pride of Lorgie, 20571, was

sired by the famous Iliad, 2843. Her dam, Pride of Invereshie, 7959, by Justice, 1462, is the dam of several champions, among which may be mentioned Prince Inca, 7844; Prince Iliad, 7091; and Prince Ito, 12869, the latter being the bull which Colonel Judy sold recently in Chicago for £1,820. From his breeding and individual merit, Prince Lorgie should prove a valuable addition to the Estill herd, which is one of the best known of the breed in America.—North British Agriculturist.

Rape for Hogs

I will tell you what I know about rape. I have two lots about ten rods square. Lot No. 1 was plowed and sowed to wheat and oats at the rate of six bushels to the acre, using disk seeder, about April 1st. When the grain was just coming through the ground I sowed about two pounds of rape and dragged it over once. Lot 2 was sowed with two bushels of wheat and oats and five pounds of rape per acre, using disk seeder, at the time the rape was sowed on lot 1. When the grain in lot 1 was about four inches high I turned in eight sows and their pigs and left them in a week, then a week in lot 2, and so on, changing back and forth each week until the middle of August when I put twenty young boars in lot 1 and kept them there until I sold them. I sold the last the 9th of December and had good pasture until we had two or three hard frosts. In lot 2 the rape and grain was all gone by October 1. If I had sowed six bushels of wheat and oats to the acre instead of two, the pasture would have been better as the hogs will not eat the rape while they can get other green feed and this gives the rape a better start. One can turn in sooner by sowing grain with rape than if sowed alone.—W. T. H. in Wallace's Farmer.

Dairy Conference at Ottawa.

(Continued from page 518)

this Dairy Conference the importance of maintaining low temperatures for the ripening of cheese and the storage and transportation of all dairy pro-

Regarding Caustic Balsam

Lamont, Ia.
The Lawrence-Williams Co., Cleveland, O.:
I am now and have been using Caustic Balsam on 29 horses for different ailments; 6 out of the 29 I have discharged scum and well. Blemishes all gone; am getting cripplies from far and near. I commenced the use of the Balsam on the 22nd of December and I am now on my fourth bottle. I gave a little of it to a man that was so deaf in his left ear that by stopping his right ear he could not hear anything. Now he can lie in his bed-room at night and hear his clock ticking in the kitchen. How will it do to inject the Balsam into a fistula without the oakum, in case the opening is so small that one cannot get the oakum in? (This would be all right. L. W. Co.)
A. B. JONES, V. S.

Combault's Caustic Balsam



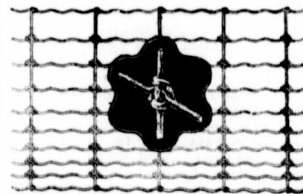
The Great French
Veterinary Remedy.

A Safe, Speedy and Positive cure
for ailments of
HORSES and CATTLE.

As a **HUMAN REMEDY** for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address:
THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.
OR 21 FRONT STREET WEST, TORONTO, ONT

Ideal Woven Wire Fencing Complete in the Roll

A heavy one-piece stay that will not buckle up and cannot slip. Note the lock. No. 9



hard spring wire throughout. A fence that will last.

McGREGOR, BANWELL FENCE CO., Limited
Windsor, Ont
Coiled spring and other fence wires.

THE BEAVER POST HOLE DIGGER



Removes old post, making room for new one with one digging. Unequaled for bush land, no difficulty in cutting roots with the "Beaver". An old customer writes: "Am highly pleased with the Digger. A number ought to be sold to my neighbors, who are constantly borrowing mine." A Beaver Digger lasts a lifetime. Order by mail. You can buy as cheaply as your dealer.
Address—

HALL & SON

30 Bay Street, - Toronto, Ont

ducts be used upon the manufacturers of butter and cheese, and also upon the transportation companies, both rail and steamship.

9. Your Committee recommends that the use of the Fermentation Test and the Acidimeter be adopted by cheese and butter-makers, and that the Provincial Departments of Agriculture be requested to make arrangements to furnish alkali solutions of the proper strength at nominal cost. Your Committee further recommends that as uniformity in the strength of the alkaline solution used in the acidimeter is desirable, and that the strength of the solution used should be equivalent to ten grammes of lactic acid in a litre of distilled water, and that a 10 c. c. pipette should be used to measure the samples.

10. Resolved that the condemnation of cultures or "starters" has arisen largely from the improper use of an aid in the manufacture of cheese and butter. It is therefore recommended: (1) that all cheese-makers and butter-makers be requested to become thoroughly acquainted with the scientific basis of the use of a culture or "fermentation starter"; (2) That in butter-making a good culture may be used with advantage at all times, but more especially in winter and in connection with pasteurized cream; (3) that cheese and butter-makers be made aware of the fact that only good cultures should be used at any time, and that these need renewal frequently; (4) owing to the importance of using none but good cultures, be it further resolved that the Provincial Departments of Agriculture be requested to furnish cultures at nominal cost, until their more general use warrants their supply by Canadian merchants.

11. Whereas the standard of "finest quality" of butter and cheese is somewhat indefinite, be it therefore resolved that the Montreal Produce Merchants' Association be requested to define standards of quality for "finest quality" in butter and cheese.

12. Whereas it is the opinion of this Dairy Conference that the outside appearances of cheese factories and creameries have much to do with inside conditions; and whereas these surroundings have a subtle influence over the maker and the patrons; therefore, be it resolved that, (1) the owners, directors and patrons should render all the assistance in their power to make the buildings and grounds as attractive and beautiful as possible; (2) that prizes be given to the makers who shall keep their factory surroundings in a manner approved of by the instructor.

13. Whereas excessive freight charges on dairy products place our Canadian dairymen in an unfavorable position compared with those engaged in this industry in other countries; therefore, be it resolved that efforts be used to secure lower freight rates so that a larger proportion of the prices received for our butter and cheese should be returned to our farmers.

14. Be it resolved that this Conference places on record its appreciation of the action of the Honorable the Minister of Agriculture and the officers of his Department in making it possible at this time for us to meet together and discuss methods for the improvement of dairy products, and that it is the unanimous opinion of those present that it would be in the best interests of the dairy industry if such meetings could be arranged for every year; and, further, in the event of such future conferences it is desirable that the proceedings should be recorded, and published in permanent form.

BUG DEATH



**Kills the Bugs.
Increases the Yield.
Improves the quality of the Crop.**

Send for free Booklet, telling how to use Bug Death. What the results are.

**BUG DEATH CHEMICAL CO. LIMITED
ST. STEPHEN, N.B.**

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REVERSIBLE

Carriers, Fork and Slings

For Round Iron, Wood, or Angle Steel Tracks



Have now become a standard of excellence with the farmers of Canada and the United States. At the World's Fair, Chicago, 1893, the only medal and Diploma given on Hay Carriers, Forks and Slings, was awarded to us on these Implements. Following is a copy of the Judges AWARD: "For open trip hook to receive the sling; automatic clutch, adjustable for size of load desired; ingenious design of stop block, which enables perfect control of carriage; no springs required for locking car which has motion in all directions; compact form of fork which can be tripped in any position; the car is reversible and of double action; for novelty, ingenuity and usefulness, excellence of material and construction. Manufactured by

James W. Provan, Oshawa, Ont., Canada
Special Discount for Cash. Correspondence Solicited.

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London Fence Machine



Fence

Built on the ground with a London gives best satisfaction, costs least money, is easiest built, looks best, lasts longest of any fence in the world.

Write for Catalogue and Prices.

**LONDON FENCE MACHINE CO.
London, Canada Limited.**

**FOR POWER ON THE FARM THERE IS NOTHING
SO CONVENIENT AS A GASOLINE ENGINE.**

The Goldie & McCulloch Co. Limited

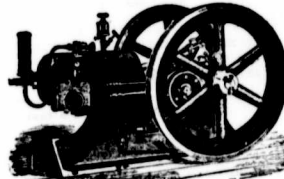
GALT, ONT.

DEAR SIRS,—

Please send me a catalogue
describing your

GASOLINE ENGINES

for farm use, also prices of same.



Name

P.O.

This is not an order.

Province.

Cut this out and mail to above address.

Market Review and Forecast

Office of the Farming World Confederation Life Bldg.

Toronto, May 11th, 1902.

Trade conditions continue favorable and the outlook bright. In wholesale lines though a quieter feeling prevails a big volume of business is being transacted. Country paper due on May 4th has been very well met, which indicates a satisfactory condition of affairs generally. The money market rules firm at 5 per cent. on call. Discounts are steady at 6 to 7 per cent., as name and nature of the account.

Wheat.

The wheat markets have not fluctuated so much during the week and a steadier feeling prevails. In speculative lines the feeling has been more bullish than otherwise, though crop conditions both in the United States and in Europe have been favorable of late. There is a difference of opinion among dealers as to the future. Some are looking for 90c wheat at Chicago before harvest comes. It is reported that farmers have fed more wheat in the Western States than was at first supposed and that they have much less of the cereal on hand than was expected. Ontario millers in several sections are complaining of the scarcity of wheat for milling purposes. Cable reports have ruled firm and on the whole the market is strong and steady.

There have been some large sales of Manitoba wheat during the week. No. 1 Northern is quoted at 74 $\frac{1}{2}$ c to 75c, No. 2 Northern 72 $\frac{1}{2}$ c to 73c and No. 1 hard at 77 $\frac{1}{2}$ c afloat Fort William. The offerings here are light and with a good home demand from millers the market is firm at 77c for red and white, 66 to 67 $\frac{1}{2}$ c for goose, and 75c for spring at outside points. On Toronto farmers' market red and white bring 74c to 83c, goose 68c, and spring file 67c to 73c per bushel.

Oats and Barley.

The oat market continues strong. Prices are now about 10c per bushel higher than a year ago at this time. In some sections dealers report that farmers are buying oats and paying more than can be got by shipping to the city. The market here is steady at about 43 $\frac{1}{2}$ c for No. 2 white on track Toronto. On the farmers' market, oats bring 47c to 47 $\frac{1}{2}$ c per bushel.

The barley market rules steady at last week's quotations.

Peas and Corn

The pea market is very quiet but firm. On Toronto farmers' market they bring 84c per bushel.

The corn market is reported easier at Montreal where car lots in store are quoted at 69c to 70c. Here the market rules steady at from 60c to 60 $\frac{1}{2}$ c for car lots west.

SEEKING AN INVESTMENT ?

If you have money you wish to invest safely we should like you to consider our

FOUR PER CENT. BONDS

They are much in demand by prudent investors who prefer unquestionable securities for their capital. We shall be pleased to send a Specimen Bond and all information on receipt of address.

Head Office :

TORONTO ST.,
TORONTO

The Canada Permanent and Western
Canada Mortgage Corporation.

Bran and Shorts

The bran market appears to be somewhat irregular. American buyers are taking large quantities and this keeps the price up. Montreal quotations are \$18.50 to \$19 for bran and \$21.50 to \$22.00 for shorts in car lots. City mills here sell bran at \$19.50 and shorts at \$21.00 in car lots l.o.b. Toronto.

Potatoes and Beans.

The potato market seem to be holding its own. At country points east 85c to 90c per bag l.o.b. has been paid. There is a slightly easier feeling here and car lots on track are quoted at 85c. On Toronto farmers' market potatoes bring 90c to \$1.00 per bag.

The bean market is firm at Montreal where round lots are quoted at \$1.18 to \$1.20 and smaller lots at \$1.25 to \$1.27 per bushel.

Hay and Straw.

The hay market is somewhat quieter in the country. At points east \$6.50 l.o.b. seems to be the ruling figure. Montreal quotations for baled hay are: No. 1 timothy \$9.00 to \$9.50, No. 2 \$8.00 to \$8.50 clover mixture, \$7.75 to \$8, and clover \$7.50 per ton in car lots. The offerings here are fair and demand not so good at \$10.25 for car lots of No. 1 timothy on track. On Toronto farmers' market timothy brings \$12 to \$13, clover \$8.00 to \$9.00 and sheaf straw \$9.00 per ton.

Eggs and Poultry.

The exports of Canadian eggs to Great Britain last season were 7,034,330 dozen as against 8,077,020 dozen for the year previous showing a decrease of 1,042,690 dozen and dealers are looking for a further reduction in exports this season owing to prices being too high on this side to admit of exporting at a profit. Prices have advanced at country points, the egg men being unable to regulate prices. The final result has been that each dealer will be at liberty to pay what price he thinks fit. Because of this 12c is being pretty generally paid in the country especially east, which is 1 cent over what was formerly agreed on and 1 $\frac{1}{2}$ c per dozen above what was paid last year at this time. At Montreal quotations are 12 $\frac{1}{2}$ c to 13c in case lots. The demand here is strong and the offerings liberal. The market is firm at 13c in case lots. On Toronto farmers' market eggs new laid bring 12c to 13c per dozen.

On the farmers' market here, chickens bring 80c to \$1.10, and ducks 70c to \$1.00 a pair and turkeys 8c to 12c per lb.

The Canadian Produce Co., Ltd., 36 and 38 Esplanade St. East, Toronto, will pay until further notice for live chickens, 8c, for ducks and turkeys 11c, for geese 6c per lb. All must be young birds. For hens 4c per lb. Dressed poultry, dry picked (except hens), $\frac{1}{2}$ lb. higher. Broilers (under two pounds in weight 20 cents per pound.) These prices are for weight on arrival. Crates for live poultry supplied free, and express paid up to 50c per 100 lbs. of chickens. No thin birds will be taken.

Cheese

The cheese market rules strong and prices are from $\frac{1}{2}$ c to $\frac{3}{4}$ c higher than a week ago for new cheese or 2 $\frac{1}{2}$ c to 2 $\frac{3}{4}$ c higher than a year ago at this time. At Montreal, quota-



Trees! Trees!! Trees!!!

We have a full line of Fruit and Ornamental Trees for Spring, 1902, at lowest possible prices. Headquarters for packing dealers' orders.

Farmers wishing to buy first-class stock absolutely first hand and without paying commission to agents, should write to us at once for a Catalogue and Price list.

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

WINONA NURSERY CO., Winona, Ont.

WANTED—BUTTER, POULTRY, EGGS

We have a large outlet, having Twenty-one Retail Stores in Toronto and suburbs.
Payments weekly. Established 1884.

The WM. DAVIES CO., Limited

Head Office—Retail Dept.

Correspondence invited. 24 Queen St. West
TORONTO

tions for early cheese are from 11 $\frac{1}{2}$ c to 11 $\frac{3}{4}$ c and it is claimed that the top is about reached. Old cheese sold during the week at 11 $\frac{1}{2}$ c to 11 $\frac{3}{4}$ c. Shipments so far from Montreal this season have been larger than for the same period last year. In England stocks are reported light and holders very firm. Nearly all the local country markets have opened up for the season. Prices at these during the week have ranged from 10 $\frac{3}{4}$ c to 11 1-16c the latter figure being the ruling figure later in the week, 11c being the principal bid. The number sold was not large.

Butter

The Trade Bulletin summarizes last week's creamery butter trade as follows:

"Since our last report sales of best creameries have taken place at 19 $\frac{1}{2}$ c to 19 $\frac{3}{4}$ c, over 700 pkgs having changed hands at those figures. We hear of several lots that were held for 19 $\frac{1}{2}$ c at the commencement of the week which have since sold at 19 $\frac{1}{2}$ c, and one lot at 19c. This would seem to denote a shading of prices to the extent of $\frac{1}{2}$ c to $\frac{3}{4}$ c on anything below strictly choice. Seconds have sold at 18c to 19c. There has been some buying for export, but it was not on as liberal a scale as at this time last year, as prices were then 1 $\frac{1}{2}$ c to 2c lower."

In contrast with this the market here rules steady with a good demand for choice creamery at 22c to 23c for prints and 20c to 21c for solids and for dairy at 16c to 17c for lb. rolls and large rolls, and 14c to 15c per lb. for medium. On Toronto farmers' market lb. rolls bring 18c to 20c and crocks 15c to 17c per lb.

Wool

The wool trade seems to be shaping for better prices, though as yet it has had no effect on Canadian values. Fleece is quoted here at 13c and unwashed at 7c per lb. However stocks of Canadian wool have been greatly reduced during the past few months by American buyers. London wool sales which opened last week show a good advance for fine wools. The production of fine wools has been falling off of late and the trade may be compelled to use more coarse grades to make up for the deficit.

Cattle

As yet the removal of the British restrictions against the importation of Argentine cattle has had little or no effect on prices on this

side and as shown elsewhere it is not likely it will have. Cables rule steady and the general firmness of the market is maintained. This firmness has been characteristic of the market here during the week with trade active. On Friday the run of live stock was large comprising 1,133 cattle, 1,566 hogs, 173 sheep and lambs and 40 calves. Though the quality of the fat cattle was fairly good there is a large number of unfinished cattle in all classes coming forward. Trade has been good with steady prices during the week. The highest price for shippers was \$6.40. Prices were well maintained for all butchers' cattle of good quality but the common rough cattle were easier. Feeders and stockers are scarce with prices firm. Choice milk cows are in demand at good prices.

Export Cattle.—Choice loads of heavy shippers are worth from \$6.00 to \$6.35 per cwt., medium exporters \$5.60 to \$5.85. Heavy export bulls sold at \$4.50 to \$5.00 and light ones at \$4.25 to \$4.35 per cwt., choice export cows sold at \$4.40 to \$4.75 per cwt.

Butchers' Cattle.—Choice picked lots of these, equal in quality to the best exporters, weighing 1,100 to 1,150 lbs. each, sold at \$5.50 to \$5.75 per cwt. Choice picked lots of butchers' heifers and steers, 925 to 1,025 lbs. each sold at \$5.25 to \$5.50, good cattle at \$5.25 to \$5.40, medium at \$5.00 to \$5.10 and inferior to common at \$4.00 to \$4.50 per cwt. Loads of butchers' and exporters mixed sold at \$5.25 to \$5.50 per cwt.

Feeders.—Light steers, 900 to 1,000 lbs. each sold at \$4.25 to \$5.00 per cwt.

Stockers.—Well bred young steers weighing 400 to 800 lbs. each sold at \$3.30 to \$4.00, and off colors and those of inferior quality at \$2.75 to \$3.00 per cwt.

Calves.—At Toronto market good to choice calves bring \$4.00 to \$6.00 per cwt. and \$2.00 to \$10.00 each.

Milk Cows—These sold at \$30 to \$50 each.

Sheep and Lambs.

The run of these was small and consequently prices were firm at \$4.00 to \$5.00 per cwt. for ewes and \$3.00 to \$3.75 for bucks. Yearlings sold at \$5.50 to \$6.00 per cwt. and spring lambs at \$2.50 to \$5.00 each.

Hogs

As intimated last week hogs made another advance and sold at \$7.00 per cwt. for select bacon hogs and \$6.75 per cwt for lights and fats.

For the week ending May 17th the Wm. Davies Co., Toronto, will pay \$7.25 per cwt. for select bacon hogs, \$7.00 for lights, and \$7.00 for fats.

The Trade Bulletin's London cable of May 8th, re Canadian bacon, reads thus:

"The market is firm at last week's prices."

Horses.

The chief interest in horses last week at Montreal has been in the

A Common Bred Cow

When toned up by Dick's Blood Purifier will give as much and as rich milk as a highly bred aristocratic Jersey cow gives upon ordinary feed, and a Jersey cow when given.

DICK'S BLOOD PURIFIER

will wonderfully increase her yield of milk. It saves feed too, because a smaller amount of well digested food satisfies the demands of the system and every particle of nourishment sticks.

50 cents a package.

Leeming, Miles & Co., Agents,
MONTREAL.

Write for Book on Cattle and Horses free.

CANADIAN PACIFIC RY.**SETTLERS' One-Way EXCURSIONS**

To Manitoba and Canadian North-West will leave Toronto every TUESDAY during MARCH and APRIL, 1902.

Passengers travelling without Live Stock should take the train leaving Toronto at 1.45 p.m.

Passengers travelling with Live Stock should take the train leaving Toronto at 9.00 p.m. Colonist Sleeper will be attached to each train.

For full particulars and copy of "Settlers' Guide" apply to your nearest Canadian Pacific Agent, or to

A. H. NOTMAN, Asst. Genl. Passr. Agent,
1 King Street East, Toronto.

horse show. In the local market there though quiet there has been a little more doing in heavy drafts and in light roadsters and saddle horses. A pair of well matched dark bays sold at \$380. Montreal quotations are:

Carriage horses.....	\$175 - \$350
Heavy draughts.....	140 - 250
Light roadsters, drivers, and saddles.....	100 - 250
Common stock.....	50 - 80

Quite a lot of business was done at Grand's last week mostly in horses for the new Canadian Mounted Rifles. 100 horses were sold for this purpose. Some little difficulty is being experienced in securing horses for the steamers. One sails this week with 900 horses. In the regular trade the market has been well attended there being a number of American and North West buyers present. The horses offered were, however, not in good enough condition to bring the highest prices. All sold readily, however, the best carriage horses at

Like other evils cramps and diarrhoea come suddenly. Promptly give a dose of Perry Davis' Painkiller and the pains go immediately. A bottle on hand will save hours of suffering—be prepared.

\$175 to \$225 each; draft horses at \$125 to \$160; general purpose \$100 to \$135; drivers \$100 to \$175 and second hand horses at \$25 to \$65 each.

Cutting Down Barberry Hedges

Prof. Lochhead, of the Ontario Agricultural College, visited Simcoe County a few days ago in connection with the recent legislation regarding barberry hedges. This legislation provides that upon petition of the farmers in the locality, barberry hedges already planted, may be destroyed. Rust has been very prevalent around Barrie and the farmers in the district exercised their privilege under the new law and asked the citizens who had some beautiful hedges to destroy them. This was done, and Prof. Lochhead's mission was to arrange for compensation to the citizens who have been thus forced to destroy valuable hedges.

Making Butter and Bacon.

A Sydney, Australia, correspondent, sends us a somewhat lengthy description of one of the leading dairies of New South Wales, known as the Byron Bay factory, from which we take the following. It will be found of interest as showing how our fellow colonists beneath the Southern Cross combine butter-making and bacon-curing with profit:

"Starting in 1895, the number of suppliers has steadily increased, until about 300 farmers now send cream to the factory. The butter output for the past twelve months was over 1,000 tons, which realized in London 107s. 8d. per cwt. Suppliers received an average price of 7.97d. per lb., and an additional bonus of 1/4d. in dividends at the end of the season, making a total of 8.095d. (over 16 cents) for butter exported. The bacon-curing department was started in 1897, and the number of pigs put through annually has increased from 120 per month to about 600. The total number of pigs slaughtered last year was 7,000 head, for which suppliers were paid an average price of 3 1/2d. (7 cents) per lb. for pork. The turn-over in butter and bacon for 1901 was £112,000. The original cost of the buildings and plant employed was £12,000, but all have been paid for, and the company has now a substantial credit balance at the bank. The manager of the Byron Bay factory has a fairly good idea of the number of cows milked by each supplier, and he estimates that, on an average, the yield of the herds in the district is not less than two gallons per day for about eight months of the year, which gives a return of £8 (nearly \$40) per cow per annum. The better class of cows easily return from £12 to £14 per annum, and the farmers are gradually improving their herds. At the last Bangalow show several of the cows tested 3.6 of butter-fat, yielding at the rate of 15 lbs. to 18 lbs. of commercial butter per week."

U S U S U S U S U S U

Four Reasons Why

5% U.S. CREAM SEPARATOR

Will Pay for Itself Every Year.



First.—You can get all the cream out of the milk; which is not the case with other systems.

Second.—Separator cream sells for more than hand-skimmed cream, and butter from separator cream sells for more than from hand-skimmed.

Third.—The skim-milk, while fresh, warm and sweet, is worth three or four times as much to feed to your calves and pigs.

Fourth.—Time and labor is saved by not having to wash so many milk pans; which makes it much easier for the woman of the house.

The U.S. SEPARATOR saves in actual cash results \$70.00 or more per cow per year, and makes dairy work a source of profit and satisfaction, instead of unending drudgery.

270 **VT. FARM MACHINE COMPANY, Bellows Falls, Vt.**

S U S U S U S U S U S

The Farmers' Binder Twine and Agricultural Implement Manufacturing Co. of Brantford LIMITED



Co-operation of nearly eight thousand farmers indicates mighty strength, and was originally pitted against one of the greatest binder twine combines the world has ever known.

The twine Trust is a thing of the past, while this Company has survived the opposition storms of ten seasons. Scepticism and indifference alone in the ranks of the farmers can now drive us from competition.

If we have no agent representing us in your locality, give us immediately the name of a good man in the interests of this Co-operative movement and your own homes.

Joseph Stratford,
General Manager

THE WONDER OF THE AGE

ALL EYES ARE ON THIS INVENTION

Patented 1895-96 a s d 110

HARVESTING PEAS



The Genuine Tolton Pea Harvester With New Patent Buncher at Work

1. Harvesting in the most complete manner from eight to ten acres per day.
 2. Harvesters to suit all kinds of mowers.
- Every Machine Warranted. Our Motto: "Not how Cheap, but how Good."**
No drilling holes in Mower Bar or Inside Shoe. A wrench is all that is required to attach it to any mower. Give your orders to any of our local agents, or send them direct to

TOLTON BROS., Guelph, Ont.

MILK TICKETS

EVERY PATRON OF EVERY FACTORY

Should insist on receiving a monthly statement of the milk delivered from his farm.
Our Ideal Milk Ticket is used by all the best factories. 25c. a hundred. \$2.00 a thousand.
Sample Card Free

Address
THE FARMING WORLD
Confederation Life Building.
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Ontario Agricultural Coll "Canada's Greatest Seed House"



Use Care and Avoid Trouble

MANY growers of Field Roots seldom succeed in having a good crop. Why is it? They may not carefully consider that seed differs in quality and value just the same as any other article they purchase. All varieties of seed are valued in proportion to the care with which they are grown. Good seed is the first requisite for a good crop, and the quality governs the price. Next to the seed is the careful selection and preparation of the ground for the crop. Care in selecting seed together with intelligent cultivation are the absolute requirements to win success—successful growers know it and prove it.

Steele, Briggs' Celebrated Turnip Seeds

Are produced by growers of the highest standing in Europe, they are all the product from carefully selected and improved strains. The following varieties are the finest bred stocks in existence and have grown the most abundant crops that it is possible to obtain. You can improve your crop by using them—

Steele, Briggs' Selected Purple Top Swede

Has stood first upon the list for many years, for being a clean grower, an excellent cropper and a good keeper. (Sealed packages only.) Price (post-paid) per lb. 30c.; $\frac{1}{2}$ lb. 15c.

Steele, Briggs' "Jumbo" Swede

A handsome tankard-shaped root with small neck and top; color purplish crimson above ground, yellow beneath; flesh yellow, firm and of finest quality. A superior strain to any offered of like color. Steele, Briggs' true "Jumbo" is supplied only in sealed packages. Avoid substitutes under the name "Jumbo." Price (post-paid) per lb. 30c.; $\frac{1}{2}$ lb. 15c.

Steele, Briggs' "Select Westbury" Swede

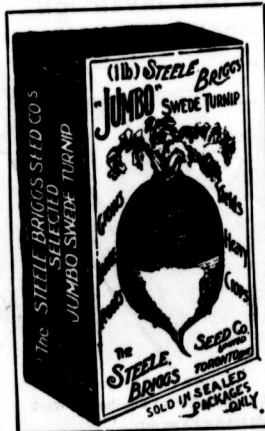
A favorite purple top variety in many sections, roots large, round and clean. It is largely grown for shipping purposes. Price (post-paid) per lb. 25c.; $\frac{1}{2}$ lb. 15c.

Steele, Briggs' "Perfection" Purple Top Swede

A new and improved variety of value and merit. Roots round, very uniform in size, small neck, short tap root, a heavy cropper and easily gathered. Free from coarse prongy roots. Price (post-paid) per lb. 25c.; $\frac{1}{2}$ lb. 15c.

Hartley's Bronze Top Swede

A variety which should be more generally grown by those who desire an excellent crop. It is very hardy and one of the very best for winter storing. Color bronzy green above ground, yellow beneath. A coming favorite. Price (post-paid) per lb. 30c.; $\frac{1}{2}$ lb. 15c.



For complete list of STEELE, BRIGGS' Field Root Seeds see descriptive Catalogue. Send for copy if you have not received it.

NOTE—Buy your Seeds from dealers who sell STEELE, BRIGGS' FIELD and GARDEN SEEDS, and insist upon having them if you want them good. If you cannot get them from a local merchant send your order direct.

The Steele, Briggs Seed Co.

TORONTO, ONT.

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