

will have to decide how much coloring you must use. Study your market requirements.

Use only good fine dairy salt for the butter. While the butter is still in the churn, some of the salt can be sifted on it, then revolve the churn half way over and put some on the other side of the butter. Turn the churn a few times, and then remove the butter to the butter-worker. It is quite a job to guess at the right amount of salt, but you should aim at having about three-fifths of an ounce of salt to each pound of butter. It is safe to put in an ounce and a half of salt for each pound to start with, for part of it will work out with the water.

It is best to work the butter twice, and then it can be placed in the prints, or whatever is used. The market you supply must decide what style of package to use. Whatever style or way you place your product on the market, have your name and address on the parchment paper, or on the tubs.

York Co., Ont.

R. H. C.

CRIMES AGAINST THE COW.

Under the striking heading, "Crimes Against the Cow," that eminent journalist-physician, Dr. Woods Hutchinson, A. M., M. D., contributes a strong but reasonable and informative article to the Saturday Evening Post, on the important subject of pure milk supply.

He first startles us by saying that milk, as it is ordinarily found in the city milk wagons and stores, contains more bacteria than sewage; that a single teaspoonful of it may contain more inhabitants than the City of New York. The milk as existing in the cow's udder is, as a rule, perfectly pure and germ-free, but hundreds and thousands of little germs are hovering about in all conceivable places, in dust, manure and filth, ready to alight in the pure, sweet liquid, there to find a most superb feeding and breeding ground; and in the course of six or eight hours, a few score will have developed into hundreds of thousands.

There is consolation, however, in the fact that only about ten per cent. are disease germs. The remaining ninety per cent. are due to dirt—ordinary dirt, plain and simple—for which not the cow but man is entirely responsible—barnyard manure, from the sides of the cow, from the hands of the milker, the dust of the stable and the barnyard.

TRANSMISSION OF TUBERCULOSIS.

So far as the transmission of infectious disease is concerned, milk is not so common a means of conveyance as often represented. Experts are frankly disagreed as to whether bovine tuberculosis is at all readily transmissible to human beings. Most impartial experts who have studied the question agree that the number of cases in which it is known to have been transmitted is exceedingly small, so that it is doubtful whether it causes more than from one-half of one per cent. to two per cent. of all cases of human tuberculosis. Fully half the strains of tubercle bacilli found in milk, butter and cream are now recognized as of human origin, from dust containing dried sputum, from flies, handling by infected individuals or from infected rooms. However, while discounting alarmist utterances as to the danger of bovine tuberculosis being communicated to man, Dr. Hutchinson insists that the milk from diseased cows should not be tolerated. In this particular point he seems to us somewhat extreme, as many cows must be in advanced stages of the disease yield milk which must be entirely wholesome and harmless unless subsequently contaminated by manure containing the tubercle bacilli; for cattle excrete with their dung the germs that human beings expectorate with their sputum, and only when the udder is affected are the germs in the milk when drawn.

TYPHOID AND SCARLET FEVER.

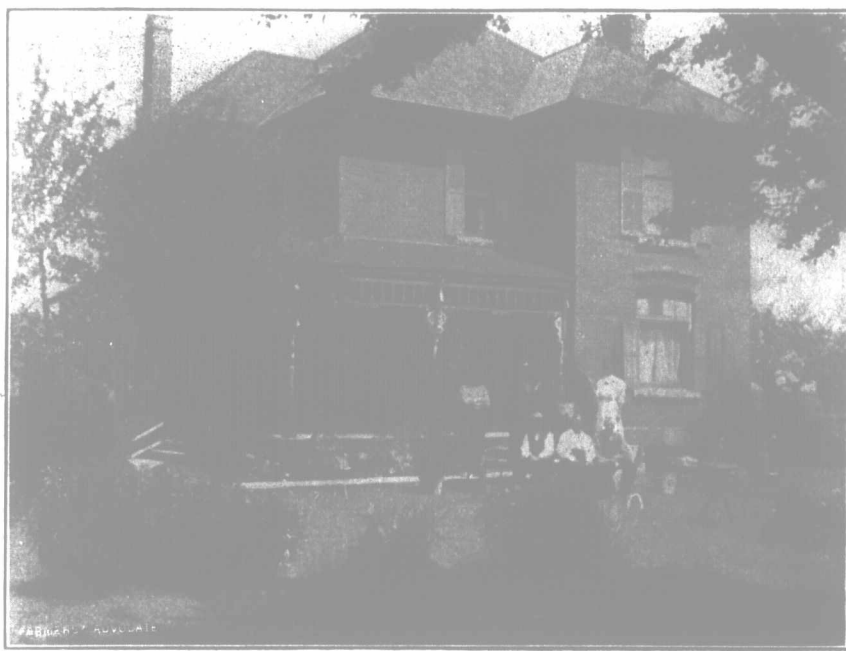
As for typhoid, its transmission through milk is purely and solely of human origin. Not only does the cow not suffer from typhoid, but even though she drinks the germs in infected water or sewage, it has been established that it is quite impossible for the germs to pass through her body and appear in the milk. Every known instance of the transmission of typhoid through milk has been directly traced to its handling by a dairyman or employee who was suffering from the disease, or who had cases of it in his family, or from exposure to flies, which had access to the germs in the near neighborhood, or from the washing of cans and milk utensils in water from an infected well or stream. The situation as to scarlet fever is identical. The milk as drawn from the cow is free from the germs of these diseases, as also of diphtheria. Boards of health now keep a watchful eye on the occurrence of cases of typhoid, scarlet fever or diphtheria in the families of dairymen. Thus the danger of direct communication of infectious diseases is one that is being rapidly got under control. The great remaining problem is how to abolish 90 per cent. of the dangers by keeping plain ordinary dirt out of the milk, thus increasing its wholesomeness and preventing the long list of enteric and other diseases which cause so many fatalities, especially among infants.

Through the efforts of organized physicians and sanitarians, the standard for milk as supplied to cities has already been greatly raised. The earliest milk reformers declared milk containing more than half a million bacteria to the cubic centimetre as unfit for use. Gradually, conditions have improved, until ten thousand, and, in some cases, five thousand germs in a like quantity is the limit. These conditions apply,

however, to but a very small proportion of the milk consumed, and a large percentage of the milk used is literally swarming with bacteria. What then is the remedy? First of all recognize the need for decided change, and then "get busy." To this end, adopt the following precautions: First, have all cows examined regularly by a skilled veterinarian for tuberculosis. Weed out all animals affected. Provide clean stables, with tight ceilings and walls, to prevent the accumulation of dust, which would sift down upon the cows and into the milk. Let the floor be cement, and floor and walls regularly cleaned by means of a hose daily, or twice daily. Let the barnyard be clean and dry, with no accumulation of manure. Carefully brush and wash, if necessary, all dirt off the cows before milking. The milker's hands and clothes should be perfectly cleansed. A separate suit of white duck, or similar material, is a simple but splendid idea. Let all pails and cans be thoroughly sterilized. Cool the milk promptly to a temperature of about 55 degrees, and close it up tightly to prevent the admission of germs. Then let it reach the consumer as quickly as possible.

This is the plan already adopted by many dairies, and results are exceedingly gratifying. Milk thus handled is perfectly sanitary, with the least possible tendency to sour. In fact, exhibition bottles have gone across the Atlantic and returned sweet. In short, let us cultivate an "infinite capacity for taking pains," until dirt shall be as unlooked for in the cow stable and dairy as in our dining-rooms.

These precautions will entail extra expense, but will undoubtedly pay in the end. Good, pure milk will surely command better prices, because of its increased nutritive value, and the confidence and safety with which it may be used. Let consumers then demand a supply of healthful, life-sustaining milk, and let producers put forth every effort to meet that demand. It will pay, and pay well. Let us by all means have clean milk.



Home of Mr. William Lawson, Halton Co., Ont.

GARDEN ORCHARD.

Potatoes promise better, both as to yield and quality, than for the last three years. Those put in early have been disappointing, but late-planted are giving promise of a liberal yield. References to blight come from various parts of the Province, but some correspondents say that spraying for this trouble is being more practiced by growers. Only a small portion of those reporting fear rot.—[Ontario Crop Bulletin for August.]

CENTRAL ORGANIZATION OF B. C. FRUIT-GROWERS.

British Columbia fruit-growers are adopting an extensive system of co-operation, including a Fruit and Produce Exchange, which is simply a central organization of several local associations, handling, also, in addition to their output, consignments from individual growers, and from districts not organized into associations. The exchange has been in active operation for about one year, and already a large quantity of the fruit grown in the Pacific Province is sold through its channels. With the devotion of the many different districts of British Columbia to fruit-growing, it very soon became evident that the marketing of the product would have to be organized as effectively as possible in order to effect economy in finding markets, making up shipments, securing refrigerator cars and minimum rates, reducing telegraphic expenses, and controlling the supply from day to day. Local organizations were first formed which looked after the preparing of the consignments, circulated information on growing,

and carried on local co-operative work. Then it became necessary to have a central exchange through which the local exchange could market their fruit and find the best markets. The exchange appears to be making good, as, through its activities, fruit is said to be marketed for about five per cent. of its wholesale selling price.

A noteworthy feature of the work of the exchange is the finding of markets in Australia for apples. This year the exchange has contracted to supply an Australian firm with 14,000 boxes of apples of the Wealthy, McIntosh, Gravenstein, Baldwin, Wagner, Northern Spy, Ben Davis, Snow, Roan Beauty and Winesap varieties. The arrangement is something of a co-operative one. The buyer guarantees the home price and divides the profits. The home price for apples runs about \$1.10 to \$1.50 for 40-lb. boxes, and those shipped to England have netted about \$1.50 to \$2.00, while the Australian market promises to yield about \$2.00 per box for the whole consignment. A certified check is given to cover the greater percentage of the value of the shipment, and there is no uncertainty as to the selling price, while in England apples are sold by auction on arrival.

The exchange also proposes to endeavor to have canneries established at Victoria Mission, Kootenay, and Kelowna.

Organized co-operation not only effects an economy in gathering fruit into wholesale quantities, but maintains standards of quality and packages, and increases the quantities sold. A case in point is the California Fruit-growers' Exchange. Some eight to ten years ago the growers of oranges in different parts of California were unable to get sale for their fruit, and began cutting down their groves, but about the same time the co-operative idea seized some of the leading spirits, and organization was begun. The first year the exchange was in operation, five thousand cars were sold, and in six years' time the number has increased to 18,000 cars. The growers are receiving fair prices for their oranges, and everyone knows that the consumer never had so many opportunities to buy nor such long seasons in which to get oranges, nor such low prices, as have existed during the last few years. In time, as great or greater progress will be reported from British Columbia.

From all appearances, the increase of sales through the British Columbia exchange should be phenomenal, since the increase will be stimulated by increased production of the orchards and increasing markets on the prairies. To both growers and consumers it should be gratifying to learn that, through the co-operative organizations and the exchange, the cost of handling the fruit between growers and consumers has been reduced to a satisfactory level. Further reductions may be made in the future by eliminating the cost of retailing, but it is hardly likely that such will be the case, for, while there is still quite a wide margin between the price to the grower and the retail price, the losses in the trade by decay are by no means small.

POULTRY.

EXHIBITION VIRTUES VS. EGGS.

AN INTERNATIONAL TEST IN ENGLAND. For some years a great change has been taking place in Leghorn fowls, more especially the Whites, due, it is believed, to the introduction of alien blood and to breeding for size of body, with a view to success in the show pen. That change has been greatly accentuated of late, and it is not too much to say that many of the present-day birds exhibited under the name of White Leghorns are not of the Mediterranean or Italian race at all, but are really crosses with fowls of an Asiatic type, as indicated by their large bodies, long legs, and heavy bone. Were only exhibitors involved by these variations, it would be of small moment, but, as a result, the great quality of egg-production, for which the breed has been famous since its introduction, 35 years ago, and which gave it the wide popularity among utility poultry-keepers it has held in this country and still holds in America and Denmark, has been sacrificed, and the English show Leghorn is practically useless for economic purposes. This fact is lamented by many of the older exhibitors, and it is deplored