

From this filter it passes directly to the cooling coil. This consists of 21 tubes carrying spring water of a temperature of 51° F., and 12 tubes of ice water. The coil is carefully sterilized just before using, with a hose bringing steam directly from the boiler in great quantity. This has sufficient force also to wash down all dust. The walls and floors of the room are also sterilized by steam, and the floors are kept moist. The milk goes over the outside of the coil and is aerated as it goes. It is delivered at a temperature of 38° F. into a trough leading to a filter of metal, lined when in use with sterilized gauze. The spring water is not wasted, but passes on through pipes to the stable for use there.

From the filter the milk passes to the bottles, eight bottles being filled at once. The bottles are stopped with a wad of pasteboard sterilized in an oven at about 160° F. for 20 or 30 minutes. This wad bears the date of milking. The whole is covered with a metal cap to exclude dust, melted ice, etc. The cap carries the certified stamp and the injunction, "Keep between 40° and 50° F." The bottles are immediately packed in partitioned boxes and covered with broken ice, and are ready for distribution. No milk is sold more than 18 hours after milking.

Bottles are washed in soapstone tubs in three waters by hand, and examined before sterilizing. All bottles from houses where contagious diseases exist are brought in separate wagons, and are all boiled before washing and sterilizing. They are then put into a sterilizing chest, the door of which is fitted with steam packing and is screwed tightly into place. Steam is turned in and kept at a pressure of five pounds, giving a temperature of 226° F. In 20 minutes the bottles are completely sterile. When they are placed upon the filling table they are covered with a sheet of sterilized duck to keep out the droppings. The milk is examined every two weeks by the chemist and bacteriologist; the Medical Commission inspects every detail thoroughly monthly. If all the examinations and inspections are satisfactory the Commission "certifies" the quality of the milk. Periodically-printed copies of these certificates, with the analyses which have been made, are sent to those interested in such matters. These are of great assistance to the physician, as giving him exact knowledge of the constitution of the milk he is using.

Now, it is not to be expected that dairy farmers, even those who supply milk to town or city customers, will institute such elaborate systems as the Fairfield Dairy has done, chiefly, perhaps, for the reason that it would not be profitable to do so, as the milk-consuming public is not sufficiently discriminating to place a proper value upon a "certified" milk. In fact, it would be an inconsistent thing to do, unless the same scrutiny were exercised in the selection and preparation of all other food products. There are lessons, however, in the foregoing description for the humblest of dairymen, one of which is the need of the most cleanly habits in caring for milk, in order to preserve it as wholesome as when it leaves the udder of a healthy cow. There is not a step in the entire system outlined that is deemed unnecessary, and that by men eminently qualified to pass righteous judgment. Every portion of the process costs money to provide for and to operate, but all are determined to be necessary in turning out the most healthful sort of milk. No doubt the same conscientious care, in kind, is exercised by many milk producers, if not in degree, while it is also true that too large a proportion pay little, if any, heed to cleanliness, further than necessity compels them in order to get their milk off their hands to the factory or customer. It should not be forgotten that while milk in pure and fresh condition is a highly valuable food product, its susceptibility to deterioration renders it highly important that all practicable effort should be made by dairymen to provide against conditions that would lessen its wholesomeness.

Jersey Butter Test at the Tunbridge Wells Show.

The following is the official report on the butter test at the Tunbridge Wells Show for the medal and prizes of the English Jersey Cattle Society. Sixteen cows were entered for the test, of which fourteen were present. The cows were milked out on Wednesday evening, July 20th, the next twenty-four hours' milk being taken for the test at seven o'clock on Thursday morning, and six o'clock in the evening.

Directly after the evening's milking on Thursday the milk was passed through a Farmer's Alpha Turbine Separator at a temperature of 90 deg.

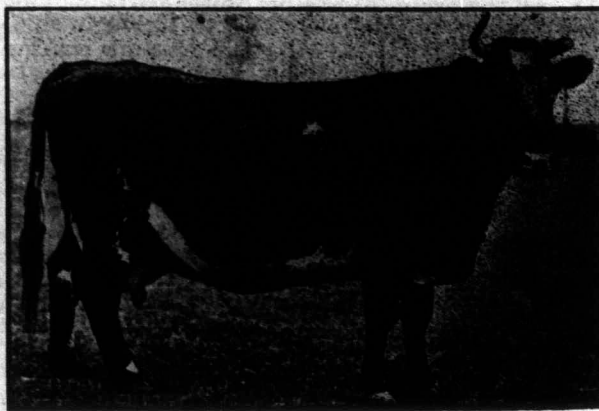
Churning began at 9.30 on Friday morning with five Wade's champion churns, the cream and churns being cooled down to a temperature of 51 deg.

The awards were as follows:

	Weight of butter.	lb. oz.
First prize, gold medal, to Mr. J. R. Corbet's cow Emma...	3	4
Second prize, silver medal and £5, to the Jersey Herd Dairy Company's Ruby...	2	7 1/2
Third prize, bronze medal and £3, to Mr. W. McKenzie Bradley's Miss Dawish...	1	15 1/2

The fourteen cows yielded an average of 1 lb. 12 1/2 oz. of butter each, at a period of 120 days after calving.

A Good General Purpose Cow.



The above illustration represents an excellent dairy cow, the property of Mr. Edmund B. Gibson, of Saffron Walden, Essex, Eng. She was reared by a neighboring farmer and bought by Mr. Gibson in the autumn of 1889. Her milking record is as under:

	LBS.
1890.....	9,837.23
1891.....	10,344
1892.....	8,916.5
1893.....	8,571.72
1894.....	8,904.16
1895.....	7,397.4
1896.....	7,725
1897.....	5,500.2
Average.....	8,491.1 during 8 years.

She has bred regularly, her heifers are invariably good milkers, and there are at the present time sixty-six of her descendants on the farm. She is now barren, and will soon be fit for the butcher. She is a Shorthorn grade, and is truly a rent-paying animal.

GARDEN AND ORCHARD.

Gnarled Pears.

"Fruit Grower" writes: "Last year I enquired, through the FARMER'S ADVOCATE, of the Dominion Horticulturist as to cause and treatment of gnarled pears produced on a couple of trees for several years, but the trouble seemed to be wrapped in more or less obscurity. However, by way of experiment, this season for the first time I gave these trees three thorough sprayings with Bordeaux mixture and Paris green, and not only are the pears larger and finer in color, but there is very little trace of the old trouble to be seen. The trees and soil were not treated differently in other respects. I do not say spraying will cure gnarling of pears, but simply give the facts as observed."

A Fruit Experiment Station for Algoma.

Mr. L. Wolverton, of Grimsby, Secretary of the Ontario Fruit Growers' Association, and Prof. H. L. Hutt, of the faculty of the Agricultural College at Guelph, at the request of Hon. John Dryden, Minister of Agriculture, recently visited the Algoma District to examine into the fruit possibilities of the New Ontario.

It was found that such varieties of apples as Baldwins, Greenings, Spies and Kings have not been grown successfully there, but such kinds as Transparent, Duchess, Wealthy and Gideon do well.

The commissioners found that a few hardy varieties of pears and cherries can be successfully grown there, and that where apple trees live they bear fruit earlier than in the older sections of the Province. Another object of the visit was to decide upon a suitable locality for an experiment station for fruit culture, and they found that the resident farmers generally favored locating it on St. Joseph's Island at a point convenient of access for visitors. Mr. Wolverton and Prof. Hutt will, it is understood, report favorably to establishing a fruit experiment station in Algoma.

Picking, Packing and Shipping Fruit.

Canadian fruit growing and the Grimsby district are closely identified. The sorts of fruit produced there are apples, pears, peaches, plums, grapes, and all sorts of small fruits, such as berries, currants, of all good sorts that grow well in Ontario. One of our editorial staff recently spent a day on each of the farms of Mr. Murray Pettit, of Winona, and Mr. A. H. Pettit, of Grimsby, making a few observations on the methods employed in conducting these farms and in handling the crops of fruit. Mr. Murray Pettit's fruit plantation occupies about seventy acres of rather heavy soil, and includes 25 acres of grapes, 14 acres of winter apples, 14 of plums, 13 of pears, and a few peach and cherry trees. While all the fruits grown are given the best possible attention, as indicated by the condition of the trees and vines and clean condition of the soil, Mr. Pettit's specialty is grapes, of which he has some 160 varieties, many of which are grown for experimental purposes. It is the intention to have exhibits of all these at the Toronto Industrial Exhibition, where our grape-growing readers should make it a point to visit. It is feared that owing to the earliness of the exhibition some of the later varieties may not be matured, but at all events an instructive display will be made. It will be remembered that Mr. Pettit with a collection of

similar magnitude secured 1st honors at the Columbian Exposition over all American grape growers, Californians included, but through some irregularity was never granted the premium. This was a great feat for a Canadian, and much credit and gratitude are due Mr. Pettit for his success.

The 25-acre vineyard is an interesting spot to visit at this season, but more interesting a few weeks later when the crop has ripened. The uniform, well-laden rows of about half a mile in length, leading up to the foot of the mountain, indicate thoroughness in the general and detailed management. The vines spread evenly over the wire trellises, and the ground between the rows is kept clean and level. The ground is usually plowed twice during the fore part of the season and shallow cultivation follows up till the crop is ripe so as to retain moisture. Of the 160 varieties grown, the following ten sorts include Mr. Pettit's choice as being most profitable to grow: Of black grapes, Champion, Worden, Concord, and Wilder (Rodgers' No. 4) were mentioned; of red, Red Lindley, Delaware, Agawam, and Cataba; of white, Moor's Diamond and Niagara. These embrace early, late and mid-season varieties, and therefore extend the picking for about two months, commencing about September 1st. The packages used are largely the ten pound chip basket, but some fancy lots go in California cases. They are usually picked into large baskets and held one day to wilt, when the bunches pack more closely together and shrink less afterwards.

Pears were the only fruit being picked at the time of our visit. The sorts most largely grown by Mr. Pettit are Early Giffard, Bartlett, Flemish Beauty, Duchess, and Keifer. Early Giffard, or Bourra Giffard, is the sort now going to market and is a ready seller. It is of medium size, bears a pretty blush, and has a delicious flavor. These, as most of the pears except the winter sorts, are being shipped in twelve-quart baskets, covered with red gauze. Some of the late varieties go in barrels and half-barrels. Early pears especially require to be picked quite on the green side, as they acquire a better flavor ripening off the tree than on and are less liable to go soft around the core. All the trees are gone over each day, and those most fit are taken, thus prolonging the picking season without waste by overripeness and by getting the largest possible growth. Their season lasts about two weeks and are followed in close succession by later sorts till late fall. Mr. Pettit pointed out the advantages of spraying as shown between sprayed and unsprayed rows. Those sprayed four times were decidedly larger and cleaner than the unsprayed rows next them.

Plums are showing a full crop of numerous standard varieties. While spraying was attended to, Bordeaux for rot and Paris green for curculio, a small portion of the crop will be lost from those pests. Mr. Pettit is of opinion that more thorough spraying would have almost entirely prevented these troubles. Plums are handled like the pears, in twelve-quart gauze-covered baskets. They, like all other fruit, are carefully picked after they have acquired the mature bloom, but before they have become soft. Only first-class, perfect fruit is put in the cases, and the quality of fruit is the same throughout the shipment.

The Peach Crop is well-nigh a failure in the Grimsby district owing to the prevalence of curl leaf during the early part of the season. A few growers have a fair crop of some sorts, especially on young trees, but these are the exception. Spraying has been resorted to in thoroughness, but evidently the correct mixture or the nature of the disease has not yet been discovered, as little, if any, good effect has been shown.

Shipping and Marketing.—For a number of years there has existed what is known as the Niagara District Fruit Growers' Stock Co. It has about 100 members, who supply between 30 and 40 agencies, extending from Winnipeg to Halifax. The central office of the company is at Grimsby, in charge of the Secretary, Mr. L. Woolverton, who receives dispatches each morning from different agencies as to the supply and price of fruits in season. These are telephoned to the members of the company, who judge for themselves where to ship. Sales are reported to the senders and also to the secretary, who pays the members their checks monthly, after deducting a 10 per cent. commission, which goes to defray expenses of telegraphing and other items. In this way the best possible market is secured just when the fruit is ready. The fruit is shipped each day right from the grower's door, chiefly at this season to Toronto, Ottawa, Montreal, and other north-eastern markets. The electric line, which passes in the case of Mr. M. Pettit through his farm, connects with the Canadian Pacific Railway at Hamilton, and takes on fruit all along the way, carrying it by Dominion Express to all points touched by that line. The Grand Trunk line also goes through the fruit district, and takes through a daily fruit train which stops at all stations. By this line all Grand Trunk points are reached by quick dispatch, so that Niagara fruit growers have little to complain of in the way of marketing facilities. We here have an evidence of the value of co-operation and strict business methods.

Of course the prices of fruit, especially grapes, pears, and plums, are not as good as they used to be a few years ago, but the more modern cultivating implements, methods of handling the crop, and better marketing facilities have made it possible to make money by correspondingly lowering the cost