

The Dairy.

New and Approved Plan of Creamery.

We present illustrations of building and ground plan of a creamery prepared by a practical creamery man for Messrs. Chas. P. Willard & Co., Chicago, Ill., including equipment and specifications of material. He gives the total cost as being about \$1800; but this estimate is much too high for Canada. It will be quite easy for the intending builder to get estimates of the material from his lumber dealer, and the equipments from any dealer in dairy supplies advertised in the *Advocate*. It is suitable for any system of cream gathering, including creaming by centrifugal separators.

PLANS AND SPECIFICATIONS.

Main creamery building 20x40 ft.; ice house 20x30 ft.; boiler room 16x18 ft.; divided as follows, and for use as described:

Main part divided into five rooms: receiving room 9x20 ft.; floor 6½ ft. above sills. Drains run to outside of building. Can be used for receiving and straining cream, washing cans, etc.

Cream room 12x20 ft.; used as a cream tempering room; floor elevated three feet above sills, slanting floor draining into drain in churn room.

Churn room 8x20 ft.; has floors on a level with sills, slanting toward cream room, with drain at the junction with elevated floor of cream room.

Butter room 10x10 ft.; slanting floor; drain connects with main drain in churn room.

Cold room, No. 1, 10x10 ft.; can be used as storage for salt, tubs or butter.

Cold storage room, No. 2, for storing butter, is 10x10 ft.; is built in ice house, and is covered with galvanized iron, and surrounded with ice.

MATERIAL.

The creamery is built in the following manner, viz.:

Sills 6x8, on stone or brick foundation. Joist for elevated floor, 2x8,

spiked to studs, supported in center with 4x6 timbers, shored up on pillars. Ends shored up with 2x4 studs; outside walls 2x4 studding, 12 ft. long. On outside of studs nail rough inch boards; paper with building paper; fur on it with inch strips; side with drop-siding, or stock boards stripped; on inside of studs rough board, paper, fur out with inch strips and cell with fence flooring, ceiling overhead with fence flooring; floor laid with clear flooring; partitions ceiled on studs set flat ways, on both sides, leaving 2-inch air space. Cream and churn rooms can be in one, or partitioned, as desired.

The above described creamery has capacity sufficient to manufacture from 700 to 1200 lbs. of butter a day. To enlarge its capacity add to the width of main building. The raised floors are constructed for convenience in handling cream. Cream taken into receiving room, strained and carried into vats, through conductor pipes; also from vats to churns, through conductor pipes, saving all lifting of cream in cans, rendering it possible for one man to do one-half more work than in a creamery without raised floors. An office can be taken off, of wash-room, if desired. The following will be found a complete bill of material for this creamery as shown:—

MAIN BUILDING.

Sills, 6 pieces 6x8, 20 ft. long.
Sills 2 pieces 6x8, 20 ft. long.
Lower joist, 32 pieces 2x6, 20 ft. long.
Upper joist, 32 pieces 2x6, 20 ft. long.
Rafters, 42 pieces 2x6, 14 ft. long.
Studding, 109 pieces 2x4, 12 ft. long.

Flooring, 1000 ft.
Siding, 1900 ft.
Casing and cornice, 1200 ft.
Sheathing, 4100 ft.
Ceiling, 4300 ft.
Strips, 1x2 in., 900 ft.
Paper 2000 square ft.
Shingles, 10,000.

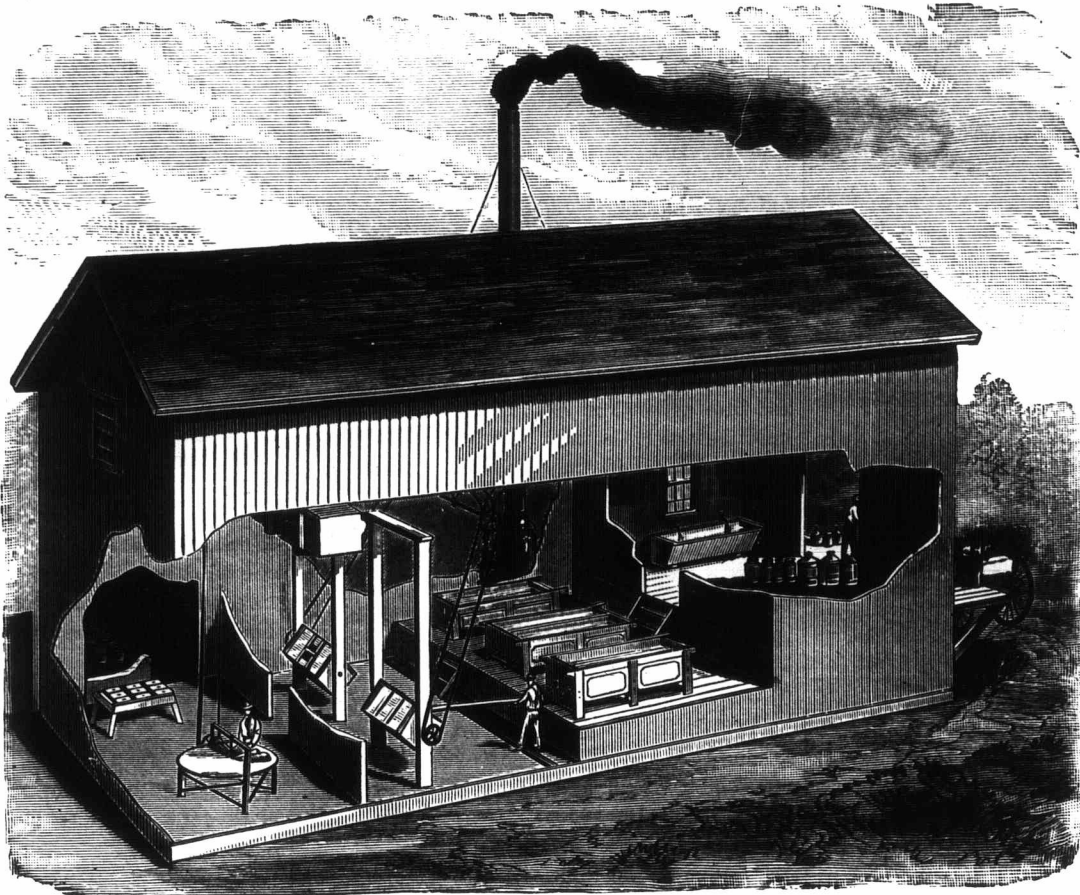
ICE-HOUSE.

Sills, 2 pieces 6x8, 30 ft. long.
Sills, 2 pieces 6x8, 20 ft. long.
Rafters, 32 pieces 2x6, 14 ft. long.
Studding, 62 pieces 2x6, 12 ft. long.
Sheathing and roof boards, 2300 ft.
Siding, 1750 ft.
Cornice and casing, 300 ft.
Strips, 1x2 in., 300 ft.
Shingles, 9,000.
Paper, 1400 square ft.

BOILER-ROOM.

Sills, 2 pieces 6x8, 18 ft. long.
Sills, 2 pieces 6x8, 16 ft. long.
Studs, 40, 2x4, 12 ft. long.
Rafters, 14, 2x4, 18 ft. long.
Sheathing, 1000 ft.
Ceiling joists, 2x4, 16 ft. long.
Siding, 800 ft.
Shingles, 3000.

Twelve 10x16 12-light windows.
One keg each of 6d., 8d., 10d., 20d., and 75 lbs. of 4d. nails.



MAIN BUILDING—SHOWING CREAMERY SUPPLIES.

Labor equivalent to four men's work for twenty-five days.

The lumber bill includes material for window-casings and doors. It will take about five and a half rolls of sheathing paper, costing about \$5.50 total. A lumber company in Chicago estimate the cost of the lumber, including shingles, at \$512.25.

In estimating on the machinery and apparatus it has been (says Messrs. Willard & Co., in a circular containing a list of their dairy supplies,) our object to make the outfit very complete, including the best goods, positively reliable. Quite a reduction in the cost can be made by substituting second grade machinery, with which the market is plentifully supplied.

The machinery, including an eight horse-power engine, and other portions of the outfit, is estimated at \$962.90, but engines can be purchased cheaper here than in the United States, although there is little difference in the price of the other supplies. Good second-hand appliances can often be procured cheap.

To kill lice on animals the *Maine Farmer* says: "Make a strong soap suds from soft soap and saturate the parts of the animal infested. After the lapse of a week repeat the application. This remedy is as harmless as pure water, and as effectual as an application of poisonous material."

Testing Milk and Cream.

[A Lecture delivered by W. A. Macdonald before the Dominion Farmers' Council.]

No. III.

1.—THE LACTOMETER.

To our dairymen this is the best known instrument, and tests the quality of the milk by the specific gravity. Having shown, however, that all testing must hinge upon the percentage of fat, some of you may ask, What has the specific gravity to do with the quality of the milk?

If the specific gravity of water be taken as 1, that of milk will, on an average, be 1.031; in other words, if a given volume of water weighs 1 lb., the same volume of milk will weigh 1.031 lbs., or if the volume of water weighs 1000 lbs., the same volume of milk will weigh 1031 lbs. Bulk for bulk, therefore, milk is 3.1 percent heavier than water. An imperial gallon of water weighs 10 lbs.; therefore a gallon of milk weighs 10.31 lbs. For all practical purposes, it is correct enough to say that a gallon of milk weighs 10½ lbs. But the specific gravity of milk may vary in individual cows from 1.027 to 1.038, or in herds from 1.029 to 1.033. It is the custom to regard milk as being pure when the specific gravity ranges between 1.029 and 1.033. Now, if the farmer knows that his milk shows the latter gravity, he can add about 13% of water, which brings it to the former limit, and the lactometer will be utterly useless in detecting the adulteration. On the

other hand, if the specific gravity is known to be 1.029, the milk may be skimmed until the gravity rises to 1.033, and the lactometer will be powerless in detecting the swindle. And yet this is not half the fraud which is permitted to be perpetrated under this test. The specific gravity of butter fat being 0.93, it is seen that the fat is lighter than the milk, and as water is also lighter, cream may be removed and water added in such a manner as not to disturb specific gravity. But I shall not dwell in detail upon this point for fear some "cute" farmer may take advantage of it; I have just said enough to make him bungle the adulteration business and get trapped. There is another circumstance which disturbs the accuracy of this instrument, viz.: dairymen, as a rule, take the specific gravity of the milk without paying any attention to the temperature. The temperature should be taken at 15° Centigrade. The extent