

combinations of materials, for the insulation of ice chambers and cold storage compartments. The experiments were not intended to be exhaustive, but simply to cover the use of such materials and plans as are likely to be used in the construction of creameries, cold storages in this country. It is not proposed at this time to set forth in detail the data that have been collected as a result of this work,* but simply to make a few recommendations based on the conclusions drawn from the experiments, coupled with the experience gained in watching the results secured at numerous creamery cold storages throughout the country.

Mechanical refrigeration is indispensable where low temperatures are required, as in a modern cold storage warehouse, and it may be employed with advantage in creameries having a large output of butter. For small or medium sized creameries, however, the first cost of installation, and the annual expense of operation, put the mechanical system out of the question. For that reason, a great majority of the creameries in Canada will continue to use ice as a refrigerant.

After watching the results at several hundred creameries, where bonuses have been paid by the Department of Agriculture on cold storage of varied construction, and of different systems, the officers charged with the administration of the payment of creamery cold storage bonuses have reached the conclusion that the best system for creamery purposes is what we have called the Circulation System.

THE CIRCULATION SYSTEM.

Although it is possible to secure rather lower temperatures with the cylinder or tank system, using crushed ice and salt, than can be obtained with the air circulation or gravity system, our experience is that a lower average temperature is usually found where the air circulation system is in use.

In any system which requires the renewal of the ice supply from time to time, its successful operation depends on the interest and industry of those in charge, and our experience is that the matter of refilling the ice boxes is very often neglected.

In the circulation system both the Ice Chamber and the Refrigerator are fully insulated, or in other words, the covering of sawdust or other material with which the ice is surrounded in an ordinary ice house, is made permanent by being added to the construction of the building.

SPECIFICATIONS FOR THE CONSTRUCTION OF A SMALL COLD STORAGE CIRCULATION SYSTEM.

General.

A cold storage on the circulation system consists of:—

1. An insulated chamber in which a season's supply of ice is stored without covering of any kind.
2. A cold room, or Refrigerator, for the storage of such goods as it may be desired to protect from the deteriorating influence of a high temperature.
3. It is an advantage to provide an Ante-room to the Refrigerator, which helps to prevent loss of cold air when the door of the Refrigerator is opened. It may be

* NOTE.—Full details of the experiments are given in the Dairy Commissioner's Report for 1906.