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DECEMBER, 1895.

Condensed Milk.

THE problem of preserving milk is one of great practical importance, especially in thickly populated districts. It is quite reasonable to say that this problem has been solved in the production of the article about which we propose offering a few remarks.

The subject of condensed milk is one with which very few persons are at all familiar. It might be a surprise to some to learn that in the year 1891 there was imported into Great Britain, in round numbers, 4½ million dollars worth of this product, while in the same year the importation of cheese into Great Britain amounted to 23½ million dollars.

In other words the importation of cheese is only 5½ times greater than that of condensed milk. Of this amount France sent the most, their exportations being valued at \$1,825,000. Holland and Norway also exported large amounts. The value of the exportation from the United States was about \$25,000. Canada did not send any. The trade is a constantly growing one. The value of this class of goods imported into Great Britain in 1890 was about \$3,224,000.

The process of manufacture is quite simple, but the greatest care

must be exercised in keeping the supply fresh and pure. Every lot must be carefully inspected and any defective lot rejected before it can spoil the rest. After being accepted, the milk is received into vats where it is heated and the sugar added to it. It is then drawn into a vacuum pan of suitable size where it is reduced by heat to about one-third its normal bulk. The principle of the vacuum pan is simply that the milk can be reduced more speedily and at a much lower temperature than in air of the normal pressure. There is consequently no danger of the finished product having a burnt or scalded taste. After being sufficiently reduced it is allowed to cool to about 70° F. when it is drawn into pound tins which are sealed by soldering. Only the best granulated sugar should be used. The quantity used varies from 35 to 50 per cent. of the finished product. In adding the sugar some manufacturers follow the rule of taking 16 parts of sugar to 100 of milk.

The average composition of condensed milk is about as follows:—

Water	25	per cent.
Fatty matter	6 to 11	"
Casein	9	"
Milk sugar	13 to 14	"
Cane sugar	40 to 45	"
Salt	2	"

It will be noticed that the quantity of fat, casein, and sugar are not in the same proportion as in whole milk, the greatest variation being in the quantity of fat. This may arise from skimming. Indeed it is claimed that unless the milk is partially skimmed the finished product will have a rancid taste if kept for any length of time.

The above analysis will indicate the amount of sugar necessary to be added. If we take 300 pounds of whole milk, which we will assume is not to be skimmed, but that all the dry solids of the milk appear in the finished product, and add to it 48 pounds of sugar we will have 348 pounds of dry solids. This should be reduced so as to constitute 3 of the product, since by analysis we find 25% water to be present. These quantities will therefore give us about 113 pounds of condensed milk. The usual selling price in Great Britain is \$9.12 per case of 26 lbs. net.

A good quality of condensed milk should have a presentable appearance, in color about that of cream. It should dissolve readily in cold water, and be free from any unpleasant taste or smell. This last is very important, and will depend largely upon the condition of the milk supplied. It is possibly this fact that enables the manufacturers of Switzerland to produce such a superior quality of goods, the rich mountain pasture and healthy climate contributing to that end.

There is only one company in Canada engaged in manufacturing condensed milk. This is situated at Truro, N. S. Their goods are labeled the "Heindeer Brand," and are unsurpassed by any, not even by the Anglo-Swiss Company or the Henri Nestle Company of Switzerland, or any of the companies of the United States.

W. R. BISHOP.