

or the bees have been exposed to severe cold during the early part of the winter, and especially if the food is unwholesome, there will be a heavy consumption of stores and a rapid accumulation of faeces, bringing about a condition known as dysentery, that shows itself in excessive heat production and in great restlessness, many of the sick bees leaving the hive as soon as the temperature rises a little, but while it is still too low for a favourable flight, so that they die outside in large numbers. Usually the abdomen is distended and the mouth of the hive is soiled with the brown faeces. In a bad case of dysentery, the colony usually dies before spring, or it survives with so few bees, and these so much enfeebled, that it fails to become profitable.

Since bees wear and age in winter just as surely, though not so rapidly as in summer, and a maximum population is needed to survive far into the spring in order to raise a large quantity of brood then, it is important that the bees going into winter should be young.

These facts explain why successful wintering depends principally upon the above-mentioned three conditions, which we may repeat: populous colonies consisting mainly of young bees, plenty of wholesome stores in the combs, and adequate protection from the cold.

STRONG COLONIES OF YOUNG BEES.

By young bees we mean those that have done little or no field work, but they should have had at least one flight before winter. Where there is no late honey flow, these bees will be raised principally in August and early September. The best way to get bees raised in large numbers in August and September is to have in the hive a queen raised the same year, this queen to begin laying not later than the middle or end of July. This means that she should be raised in June or early July, during the honey flow from clover. No better conditions for rearing queens exist than those found in Canada during the clover honey flow. Not only will the colony containing this young queen raise more and better bees for winter than one containing an old queen, but the young queen will be more prolific and profitable the following season. It may not, however, be convenient to requeen every colony every year, and a vigorous year-old queen will make a good colony for wintering if the colony is strong in July. Colonies that are not strong in the fall should be put together so that each hive contains enough bees to crowd over at least eight combs of Langstroth size before the weather is cold enough for clustering closely.

WHOLESOME STORES IN PLENTY.

It is fortunate that, as a rule, the honeys of the north are more wholesome for wintering than those of the south.

Clover honey is an excellent winter food for bees. In places around Lake St. John, Que., where the honey stored comes entirely from alsike and white clover, the bees winter well in spite of nearly seven months of confinement in the cellar. Buckwheat honey has also been found satisfactory for wintering in the region where this plant gives nectar.

On the other hand, dandelion honey has proved unwholesome. Some of the honeys gathered in late summer are also unwholesome, especially those found in certain marsh districts in the Maritime Provinces. The honey of the hard maple has been complained of by beekeepers in southern Ontario. Dandelion honey and the honey reported to come from hard maple granulate so hard in the combs that the wintering bees may find it difficult or impossible to remove and use the honey. At Ottawa, hard granulated honey, which it is suspected comes partly from sweet clover, occasionally causes considerable loss of bees in winter for the same reason.