

each hive when put into winter quarters 58½ pounds, when taken out on April 22nd 49¼ pounds per hive, showing that each hive had lost 9¼ pounds on an average.

Experiment No. 2.

Six colonies were put into the cellar and placed on the shelves, a three-inch block being placed between the bottom board and the brood chamber only in front, making the full entrance 3 inches high across the whole front. The wooden covers were removed and replaced with a chaff cushion. Temperature same as in experiment number one. During the whole winter all the colonies in this experiment were perfectly dry and clean and showed no uneasiness of any kind. The bees could be seen hanging in a quiet cluster below the frames any time during the winter. The average weight when put into winter quarters on November 23rd was 59 pounds, 12 ozs., when taken out on April 22nd, 51 lbs., 8 ozs., showing that each hive had lost on an average 8 lbs. 4 ozs.

Experiment No. 3.

Six colonies were put into the cellar and placed on the shelves with tops and bottom boards of the hives left on just as they were brought in from the bee yard. They were watched for dampness, mould or dysentery also to compare the amount of honey consumed. Temperature of cellar the same as in experiment No. 1. During December and January all were very quiet. During February there was considerable humming. Drops of water were noticed along the entrance of three hives. There were but very few dead bees on the bottom boards and no signs of dysentery. On examination when set on their summer stands two of the hives had considerable moldy combs. The average weight when put into winter quarters 58 lbs. 10 ozs., when taken out on April 22nd, 49 lbs. 3 ozs., show-

ing that the average loss of each hive was 9 lbs., ozs.

Experiment No. 4.

Six colonies were put into the cellar and placed on the shelves with bottoms of the hives left on just as they were brought in from the bee yard. The wooden covers were removed and nothing left on except a tightly-seated propolis quilt; the natural entrance was left wide open. Temperature of cellar same as in experiment No. 1. During the entire winter the bees kept perfectly dry and a very slight humming could be heard. There were but very few dead bees on the bottom board and no sign of dysentery. On examination when set on their summer stands all the hives were found to be in first-class condition. The average weight when put into winter quarters November 23rd was 5 lbs. 15 oz.; when taken out on April 22nd, 51 lbs. 3 ozs., showing that on an average each lost 8 lbs. 12 ozs.

Experiments to Determine Whether Bees Would Consume the Most of Honey or Sugar While Being Confined in Their Winter Quarters.

Eight colonies in Langstroth hives were selected for this experiment, of as nearly equal strength as could be secured. On September first the natural stores were removed from the sets. On September 2nd all were weighed, as follows:

(a) The four colonies fed sugar syrup:

- No. 1—30 lbs. 7 oz.
- No. 2—31 lbs. 12 oz.
- No. 3—31 lbs. 10 oz.
- No. 4—31 lbs. 3 oz.

Average—31 lbs. 4 oz.

(b) Four colonies fed extra honey:

- No. 1—30 lbs. 9 oz.
- No. 2—31 lbs. 10 oz.
- No. 3—30 lbs. 12 oz.
- No. 4—31 lbs. 1 oz.

Average—31 lbs.