

July 29—Experiment with four varieties of raspberries: The red, purple, very light colored, and the black cap. Each box contained some of each sort. They were placed in the hives in exactly the same position as the strawberries.

At this date there was considerable honey coming in. The bees did not touch any of the fruit in the hive, super, on the trees, nor in the house apiary. On July 31st half of each sort of berries that were sound were cut in halves, to see if the bees would attack the fruit, but they did not touch any of them. All the sorts in the hives decayed much sooner than the fruit exposed. The fruit exposed to the air dried up considerably and moulded.

A second test has been made with peaches, pears, plums, and grapes. They were arranged the same as in 1901. The bees began to work at once, both upon the dipped and punctured fruit. The former was cleaned thoroughly of honey during the first night; upon the punctured fruit the bees clustered thickly, sucking the juice through the punctures as long as they could obtain any liquid. At the end six days all the fruit was carefully examined. The sound fruit was still uninjured in any way. The dipped fruit was in a like condition, quite sound, but every vestige of honey had disappeared. The punctured fruit was badly mutilated and worthless; beneath each puncture was a cavity, and in many instances decay had set in. The experiment was continued during the following week, the undipped sound fruit being left in the brood chamber; the dipped fruit was given a new coating of honey and replaced in the super, and a fresh supply of punctured fruit was substituted for that which had been destroyed. At the end of the second week the fruit that was

sound at the end of the first week that had been dipped in honey and also in the brood chamber as well as the punctured fruit, was considerably decayed, and where any openings appeared showed signs of being worked on, but to no very great extent. For the third week, fresh samples of fruit of all the above kinds were used. The results of this test was very similar to that of the first week, and being later in the season the fruit that had been put in sound some of it had begun to decay. After the third week the bees belonging to the two hives which had been deprived of all their honey appeared to be very sluggish, and there was many dead bees about the hives; the weather being cool and damp was very much against those colonies. These colonies had lived for the first three weeks on the punctured fruit, and on the honey off the fruit which had been dipped, as there were at that season few plants in flower from which they could gather nectar, these bees had died of starvation notwithstanding the proximity of the ripe, juicy fruit. This supply of food which they were urgently in need of was only separated from them by the thin skin of the fruit, which, however, this evidence seems to prove they could not puncture as they did not do so.

The mean weight of each of those two hives on September 5, when the experiment was begun, was 24½ pounds. At the end of the experiment four weeks later, each had lost 3½ pounds. The mean weight of the two hives, in each of which were left five frames with brood and honey was at the beginning of the experiment 36½ pounds. The mean loss for each of these hives was 1½ pounds.

(b) Fruit exposed in the open air hung from the branches of a tree in the apiary enclosure. In this experiment three sets of whole fruit were

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