

that bees as the great agents in pollination are far more valuable to the world than the honey they produce. The best orchardists (in California) now arrange with apiarists to bring their bees to the orchards; they find they must have the bees."

Coming from such an authority, this is eminent testimony as to the value of the hive-bee to orchardists.

Conclusive evidence in this respect came under my own observation. In the winter of 1882 I started a bee-farm at Matamata, and had about one hundred colonies of bees when the fruit-blooming season came on. The apiary was located close to a mixed orchard of large trees, covering some 10 acres. The nearest bush was about five miles distant, I should judge, and, the orchard being in an open plain, there was no shelter for wild bees nearer than the bush, so that it is not at all likely that the orchard was ever visited by bees. I was informed that though the trees blossomed abundantly each season, the trees bore very little fruit, that the whole ten acres did not supply enough fruit for the station. The result in that and subsequent seasons, by the aid of my bees, was that the trees had to be propped up in all directions to keep them from breaking down under the weight of the fruit.

Mr. R. T. Morrison, of Messrs. E. Morrison & Sons, Warkworth, well-known horticulturists, supply the following interesting note regarding cross-pollinating experiments, which have been carried out at their orchards:

Three seasons ago a small pear tree was selected for operations. When the blossom buds were in right condition—namely, when the petals of a large proportion of the blossoms were almost ready to break open—the blossoms and blossom-buds were thinned out to, roughly speaking, about one-sixth of what the tree originally held, leaving only such as would open into full flower in about a day or two.

These petals (all being of unopened blossoms), together with stamens and in some instances calyx also, were then removed, and the tree was covered with butter-cloth. In a few days pollen of another variety of pear was administered to the stigmas, being placed there by hand, and not shaken on, and the tree was again left covered with buttered cloth. This pear-tree set and matured a large crop of fruit—in fact, too large—while other trees of the same variety alongside set practically nothing.

Two seasons later (that is in 1905) this same tree was treated in the same manner, except that blossoms were thinned down to about one-tenth; butter-cloth or other covering was not used; and pollen from another variety (that is a different variety from that from which pollen was taken for the previous experiment) was made use of. Though no covering was used it would appear that the bees would not be likely to much visit a tree from which the petals had been entirely removed. Still, almost every blossom that was treated seemed to set, and the result was a crop much too heavy. Other trees of the same variety alongside had a fair crop, but not nearly so heavy as this one.

Other experiments with various fruits have been carried out at different times with varying success. The above instances are perhaps the most striking.

I may mention that bees are very busy agents in our orchards during the blossoming season, when the weather is fine enough. Still, it would be too much to expect that the bees would always be able to carry the right pollen to the right trees at the right time. But no doubt the bees would be even of much more value in the orchard than they are at present if we had the knowledge as to which varieties of a fruit were best for fertilising other varieties, and were to lay off our orchards in such a way as to give the bees the best opportunity of

carrying pollen to other.

An eminent authority of the fertility of the apple said:

The apple, being a pseudo-synca, should be regarded as a unit by an orchardist. The development of the fruit is cut across by the dissepiments which should be in the blossom which the stigmas, three or four on each one, and each one with a dissepiment. It required an insect seeking honey to break the breasts (furnishing a dance of long distance) and dusted with a bloom whose receptive condition. It would appear that three would be pollinated, though a single one produced. The tree frequently drops its fruit, hence known as the actual cause of the largest number of fruitless trees.

Cheshire says: "keeping" (Vol. two hundred and during a gale, & a lecture illustrating falling in evidence traceable to imbecile fruits are readily formed, a part of the want of perfect one such apple found opposite These facts take conclusively how completely dependent upon