

TESTS WITH UNFRUITFUL PLUM-TREES.

THE CROSS-POLLINATION FACTOR PROMINENT.

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ON some of the heavier lands in Hawke's Bay difficulty is experienced in getting greengages and a few other varieties of plums to bear fair crops of fruit. The trees grow splendidly, and usually blossom well, but the fruit falls when it is about the size of a pea. With a view of elucidating this matter, the Department was recently requested by the Hawke's Bay Fruitgrowers' Association to carry out an experiment in one of the local orchards. Mr. E. F. Sibeth, of Clive Grange, very kindly placed his orchard at the Department's disposal for this purpose.

This orchard consists of a block of 133 plum-trees, made up of 92 greengages, 36 silver-prunes, and 5 giant prunes. The greengages are planted in a block. A poplar shelter-belt borders both ends of the plum block, pear-trees are on one side, and the silver-prunes on the other. The giant prunes are next the silver-prunes and farthest away from the greengages. The trees, although lacking proper training, are exceptionally well-grown specimens, as shown in the photograph on page 164. The greengages, particularly, have never cropped, the best average yield being not more than a half-case per tree. The silver-prunes have cropped a little better than the greengages. The giant prunes are by far the most consistent bearers. The trees have not been pruned for at least two years—possibly longer. The spur-development was splendid, especially on the two-year-old wood—in fact, the trees gave the impression of being overspurred.

This season three hives of bees were brought into the orchard; these were formerly situated at a distance of about 500 yards.

The property offered very favourable opportunities for investigation, and the following tests were established on defined plots for the purpose of ascertaining whether cultural methods were to any extent responsible or whether the trouble was wholly due to faulty pollination:—

No. 1: Centre of trees opened by cutting out large limbs; no other pruning.

No. 2: Centre of trees opened up and leading limbs well spaced by taking out at least one out of three leading limbs.

No. 3: Systematic reduction of spurs over the whole tree. For example, where there were six fruit-buds at least two were cut off. To carry this out most of the tree was cut back on to the previous season's wood.

No. 4: Centres opened up and limbs spaced, and similar spur reduction to No. 3.

No. 5: Ring-barked around trunk, 1st August. Piece of bark $\frac{1}{2}$ in. wide removed below limbs.