



A Row of King of Tompkins Apples in Bloom in the Orchard of W. Palmer, Victoria, B.C.

The Pollination of Fruit

Wm. Gibbs, Appin, Ont.

POLLINATION is accomplished through two agencies: To a small extent by wind under favorable conditions, and to a large extent by pollinating insects. Of these the honey bee is the most important, because of its great numbers, owing to the many apiaries that are kept throughout the country.

The relatives of the honey bee, which also assist in pollinizing fruit trees and flowers, include the bumble bee, which is almost the only medium by which red clover is pollinized. The balance of her relatives include ants, lonely wasps, digger wasps, and colony wasps. These latter have little effect on the pollination of fruit blossoms on account of their not being present in sufficient numbers.

Investigations have shown that bees are an absolute necessity for the production of fruit and clover seed. They are also the only agencies by which cross-pollination takes place excepting that affected by wind, which is not considered to take place to any great extent. In some flowers the pistils are sterile to their own pollen. Thus they are dependent entirely on cross pollination for their very existence. It is claimed that because of cross-pollination the apple is more vigorous and more resistant to disease, better able to withstand frost without killing, grows larger, and has more color.

Prof. F. A. Waugh, of the Massachusetts Agricultural College, has frequently warned fruit growers against the danger of spraying fruit trees when in bloom because of the destruction of honey bees that results. Speaking at a convention last June he gave some conclusive evidence, showing that the honey bee was

the principal and almost the only agent in the pollination of fruit trees. He referred to the claim to the effect that there are other agencies than bees for doing this work, principal among which is the wind. To determine the relative importance of these factors he stated that he had taken pieces of glass, coated them with vaseline, and secured them on the windward side of fruit trees in full bloom, at a distance that was about equal to the distance between trees. He found that these glasses, smeared as they were with grease, received almost no pollen dust, even when the wind blew through the trees in full bloom in the direction of the plates. He further stated that there are practically no insects except bees that are flying when fruit trees are in bloom, and that nearly all the cross-pollination that is effected is through the agency of the bees. There are some varieties of trees that are self-pollinating, but even these varieties have more and better fruit when bees are present. Prof. Waugh is not only not a beekeeper, but he is regarded as one of the greatest authorities on fruit culture in the United States.

A Remedy for Plum Aphis

A. H. Ruff, Toronto, Ont.

The following remedy has been used by me as a remedy for the plum aphis (*aphis pruni*). I feel that I can highly recommend it:

Thirty pounds of soap (soft soap is the best), one gallon of coal oil, three pounds of naphthalene, and nine parts of water for the stock solution. If boiled until the soap is dissolved it will readily mix. Use eighteen pounds of the stock solution to one hundred gallons of water. Spray before the buds swell.

Changing Varieties

D. L. Mackintosh, Calgary, Alberta

There are by far too many varieties of apples grown in British Columbia, as well as in most other fruit districts. Growers are aware of this, but when you mention the advisability of changing to varieties that have proved themselves worthy of culture they shake their heads and seem to have the idea that this is going to involve a great loss.

Most growers consider that the trees should be taken out and young trees planted in their places. This is wrong. The thing to do is to cut over the present trees, leaving about one-half dozen branches about six inches long above the crotch, and more if the tree is of any size, and crown graft at least four scions into each branch. This would give at least twenty-four young growths right away, and owing to the vigor of the roots they would make great growth the first and second year. The chances are that if everything was favorable there would be a quantity of fruit the third year. Thus the whole character of the orchard could be changed in a few years with very little loss.

If the right varieties were worked on the old trees, the grower would be more than compensated for any trouble or apparent loss he might have had. I should never think of taking the old trees out, because the change can be made so much sooner by cutting back and grafting the desired varieties.

Better Fruits at Less Cost

Prof. H. A. Surface, Pennsylvania

Obtain uniformity of size by a uniform system of pruning, and especially by systematic thinning, feeding, cultivating, mulching, manuring, etc.

Both increased size and color can be obtained by making several pickings, taking each time only those that are well developed and colored, leaving the others for future development in size and color.

Avoid blemishes from diseases by spraying with fungicides, according to the teachings of our plant pathologists, and by planting varieties on ground suited to each respectively. For example: Champion peach, on low ground or where there is no air drainage, is almost sure to have ripe rot; and Salway in such a location is very liable to have scab and crack. Also spray with strong lime-sulphur solution once each dormant season, better immediately before the leaves appear; and with bordeaux mixture or self-boiled lime-sulphur just before the blossoms open; and spray again with the same, at proper intervals, two or three times after the blossoms fall.

The road that leads to the orchard is the pathway to a simple, happy prosperous life.