

# THE POLLINATION OF AVOCADOS

By A. B. STOUT

Pollination is the process by which pollen is carried from the stamens and deposited on the stigmas of the pistils in the flowers of plants. Then the growth of pollen tubes through the stigma to the ovary leads to the final acts of fertilization, which include the fusion of a sperm cell from the pollen tube with an egg cell in the ovule. This double cell develops into the embryo of the seed. It is certain that it is the rule that a fruit with a seed can mature on most of the avocados of the present day only when there has been a proper pollination that is followed by fertilization. Thus proper pollination constitutes an important step in the production of fruit.

But in avocados there is a most remarkable regulation in the development of the flowers and of their stamens and pistils which restricts and even prevents many self-pollinations,<sup>1</sup> many close pollinations,<sup>2</sup> and also many cross-pollinations.<sup>3</sup>

This development and regulation is such that the flowers of one group of seedlings and clonal varieties (the "A" group) function as pistillates or females in the forenoon and as staminate or males in the afternoon while those of another group (the "B" group) function as males in the forenoon and as females in the afternoon. Thus there is an adaptation that restricts self- and close-pollinations and that provides for an alternation of the reciprocal cross-pollinations possible each day between certain members of the two groups.

But the horticultural practice of vegetative propagation by grafting and budding to obtain clonal varieties of avocados that are planted in solid blocks operates to prevent cross-pollination. In nature, or in plantings of seedlings only, every avocado tree is a seedling and any group of trees will be a mixture of A trees and B trees with opportunity for reciprocal cross-pollinations. When a seedling of merit is propagated by grafting or budding all trees of the clonal variety are alike in their trunk and branches (except for bud variation), they all have the same flower behavior, and there is no more chance for pollination from tree to tree (intra-

---

<sup>1</sup>Pollen taken from the stamens to the pistil of the same flower.

<sup>2</sup>Pollen taken from one flower to the pistil of another flower on the same plant or on another plant of the same clonal variety.

<sup>3</sup>Pollen taken from a flower of one plant to the flower of a different plant either a seedling or a plant of a different clonal variety.