

BEEES AND POLLINATION OF BLOSSOMS.

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I am glad that I was asked to open the discussion on the subject of pollination. It is one that has interested me much in the past, and one to which I have given some thought, study and investigation. It is, I believe, one of first importance to the practical fruit-grower, and, when it is rightly understood, will change not a little the views and practice of many of our pomologists.

I need hardly state here that the essential organs of every flower are the pistils and stamens; and that for the plant to fruit, it is absolutely necessary, in most cases, that the pollen from the anther, or tip of the stamen, shall reach the stigma or end of the pistil, that it may send its tubular growth down to influence the ovules in the ovary at the base of the pistil. Unless these pollen-cells reach the ovules, the latter are unable to develop, and in nearly all cases there will be no fruit. It is possible that in very rare cases the so-called fruit may develop without pollination, but this is never true of the seeds. This process is known as pollination, or pollenization. Fructification and fertilization are also used, but the latter may be used and is in another sense, and is undesirable. We may speak of fertile stamens when they are able to produce pollen, and of fertile pistils when they are able to bear ovules.

It is also known that many plants, including most of our cultivated fruits, especially those with showy or sweet smelling flowers, must receive the pollen from other varieties, or pollination will be imperfect, or entirely ineffective.

That is, if the stigma of any flower receive pollen from the same flower, or from flowers of the same tree, or from those of trees of the same variety, either no fruit will be produced, or if produced it will be imperfect, perhaps small and seedless. In other words, much of our fruit bloom, that it may bear perfect fruit, or any fruit at all, must be pollinated from some other variety: as Bartlett from Anjou, or Anjou from Clairgeau, etc. The arguments in favor of this view are drawn from the structural peculiarities of the flowers, and also from experiments.

In many flowers, especially irregular ones like the orchids, the peculiar form of the flower precludes close pollination and makes the presence of insects necessary to any possible pollination. In dioecious trees—those in which the pistilate flowers are all on one plant, and the staminate all on another—crosspollination is absolutely necessary, and unless pollen is carried by the wind or insect, there can be no pollination. The willow and poplar are examples of this kind of inflorescence.

You all know that some of our common varieties of strawberry are almost wholly pistilate. In other plants termed monoecious, the flowers are all either pistilate or staminate, but both kinds are on the same tree or plant. In such cases there must be transfer of pollen, but not necessarily from a different tree. The oaks, walnuts and sycamores are all monoecious.

In many hermaphrodites, plants with perfect flowers; where each flower bears both stamens and pistils, there is a very curious provision which insures cross-pollination.

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