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carrying pollen from one variety to the other.

August, 1909.

An eminent authority, when speaking of the fertilisation of apple-blossoms, said:

The apple is called by botanists a pseudo-syncarpous fruit, because it may be regarded as five fruits gathered into a unit by an envelope formed by a development of the calyx. If an apple be cut across we see five compartments or dissepiments in the core, each one of which should contain pips or seeds. The blossom which preceded the fruit had five stigmas, three of which remain in section, and each one of which communicated with a dissepiment or partition, and required an independent fertilisation. Bees seeking honey would, by getting their breasts (furnished as they are with abundance of long webbed hairs) thoroughly dusted with apple pollen, and flitting to a bloom whose stigma had reached the receptive condition, bring about fertilisation. It would, however, frequently happen that three or four of the stigmata only would be pollinated. In this case an apple, though an imperfect one, would be produced. Trees agitated by the winds frequently drop a number of their fruits, hence known as "windfalls," but the actual cause of droppings is in by far the largest number of instances defective fertilisation.

Cheshire says in his "Bees and Beekeeping" (Vol. i, page 323): "I had two hundred apples, that had dropped during a gale, gathered promiscuously for a lecture illustration, and the cause of falling in every case but eight was traceable to imperfect fertilisation. Such fruits are readily recognized by being deformed, a part failing to grow from the want of perfect fertilisation. Cutting one such apple across, no seed will be found opposite the undeveloped part. These facts taken together show condusively how completely our fruit-crop is dependent upon insect agencies, and

amongst these the hive-bee takes the most important place."

In the case of the strawberry—and the same applies to the raspberry and other berry fruits—each little achenia (popularly known as seed) dotting its surface possesses a style and stigma. The stigma of each of the achenia must be fertilised to produce a perfect fruit; otherwise, if this is but partially accomplished, the part unfertilised remains undeveloped hard, shrunken, and green—when the fertilised portion is fully ripe. Almost any dish of strawberries will furnish such examples

When we consider that, according to Cheshire, it requires from 100 to 200, or even 300, distinct fertilisations to produce a perfect strawberry, we can realize how necessary it is to have the agents for such fertilisation near at hand when the plants are in blossom. Gooseberries are absolutely dependent on insects, and in fact all fruits are dependent upon outside agencies for their growth and development.

It is well to note here a statement in Cheshire's work that I have not noticed elsewhere, viz.; "There is a tendency to a separation of the sexes in the cultivated strawberry, which Darwin observes "is far more strongly marked in the United States than in Europe"; and growers will do well to note that plants bearing unusually large blossoms are frequently tending to become male, and produce few fruits, while those of the same variety and under the same treatment that produce small blossoms are tending to become female, and are abundant bearers, while they yield few runners. Without care in selecting, the numerous runners of the former would ultimately supplant the female forms, and so ruin the stock for economic purposes.

When lecturing to some of the large growers of strawberries in the United Kingdom, Mr. Cheshire found them all quite unaware of the above tendency.

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