

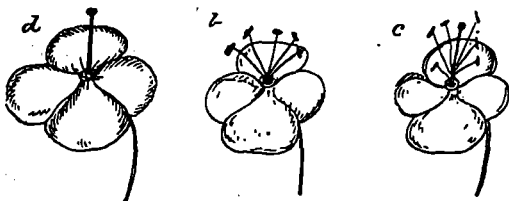
The Orchard and Garden.

(CONDUCTED BY MR. GEO. MOORE).

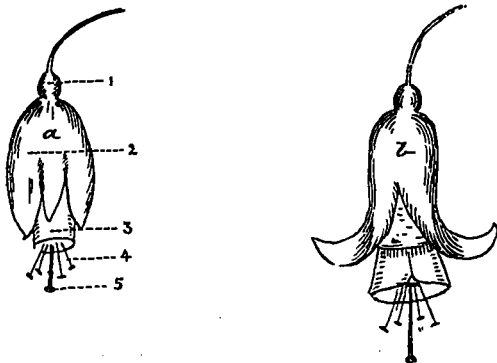
HYBRIDIZING AND SELECTION.

There is no more fascinating operation connected with horticulture than that of systematic hybridization and selection for the purpose of obtaining new and improved varieties of fruits and flowers. A description of how this is accomplished and the results achieved may be of interest.

It will be necessary to explain to the uninitiated in botany, some facts to render this article intelligible.



a. Imperfect pistillate flower.
b. Staminate.
c. A perfect flower.



a. Incurved sepals.

1. Pericarp or seed sack.
2. Calyx and sepals.
3. Corolla.
4. Stamens and anthers.
5. Stygma or style and pistil.

b. Reflexed sepals.

All plants have male and female organs of reproduction in their blossoms. These are called pistils and stamens; at the tips of the pistils is found a little gummy matter and in those of the stamens are little sacks called anthers. There contains a very fine powder called pollen, and it is absolutely necessary that some of this pollen must come in contact with the pistil before any

seed can be produced. This union is effected naturally by insects which lodge upon the flowers or by the action of the breezes which shake some of the pollen on to the pistil at the time when it is in the right condition to receive it and thus the process of fecundation is accomplished.

Most plants have pistils and stamens in the same flower but there are some which have the pistils only and these are called pistillate, while there are others which have only stamens and these are called staminate. Some varieties of the garden-strawberry are examples of this; people who do not understand sometimes wonder why their strawberry bed has yielded no fruit, when the cause is that they have planted a staminate, or pistillate variety only, and these being none of the opposite set in the locality, the blossoms have not been impregnated with pollen, and entire sterility is the consequence.

The effect, as before stated, is produced by the provisions of nature but it may be done artificially and systematically, and produce varieties almost at the will of the operator.

To do this it will be necessary to protect the flower so that no pollen except that which is desired can come to it. This is usually done by tying a piece of gauze over it, watching carefully to see when the pistil is exuding the gummy matter at its tip, and then placing the pollen of the variety with which you wish to cross it, upon it with a fine camel's hair pencil, you will soon see whether the operation has been successful by the darkened appearance of the pistil, and then the covering of gauze may be taken off.

The process and the end gained is full of interest, and it is astonishing what results may be achieved, and how one variety will show its effect upon another in producing a seedling which partakes of the characteristics of both parents.

Some flowers are much easier to hybridize than others because the stamens and pistils are more prominent, the Fuchsia for instance. (1) A good many years ago a person undertook to produce a Fuchsia which would be an improvement on existing varieties. The varieties of that time, with very few exceptions, had incurved sepals only, so that the corolla, the most beautiful part of the blossom was hidden. Now, to obtain a variety with reflexed sepals would of course be a desideratum (the accompanying sketches will

(1) Name derived from Fuchs, a German botanist; almost invariably spelt wrong, fuchs-fox. Ed.