Origin and Development of Some Common Fruits.

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MAN is not content to see the outside of things. It is not enough for some of us that we can recognize apples and grapes as such, but we wish to know how these things come to be, how they originate and how they develop. We are to consider for a few moments the origin and development of a few of our common edible fruits.

We all know that the flower precedes the fruit, and before we can talk of the origin of the fruit we must look to the structure of the flower. In Fig. 1519 is

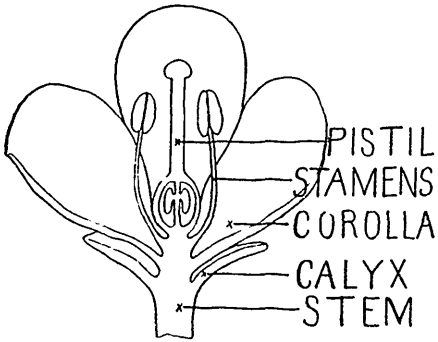

FIG. 1519.—Diagram of a flower in longitudinal section.

shown a diagrammatic view of a longitudinal section of a complete flower. The parts of the flower are seen to arise in circles from the flower stem, the lowest circle being the calyx, the next above, the corolla, then the stamens, and sitting on the apex of the stem is the pistil.

The calyx is usually green, and surrounds the stem as a cup or as several small leaves; in the bud it is folded closely over the other parts within, often protecting them by a waxy covering from the intrusion of rain, and from bird or insect enemies by distasteful secretions.

The showy corolla which to man's eye paints nature in beautiful colors, is a sign unfurled by the plants to tell insects of good things to eat, of banquets of pollen and nectar. The stamens with slender stalks supporting polen-sacs are the male organs whose pollen-grains effect the fertilization of the ovule and thus start the growth of the fruit. The pistil is the female organ containing in flask-shaped base, or ovary, the ovules which are the germs of seeds.

This is the structure of a simple and complete flower. But every part just named is capable of modification, and there is no part among those named that may not be absent from some species of flowers.

In the pea and the bean flower, for instance, the corolla is so modified that its separate leaves are no longer alike, but together present a peculiar butterfly appearance. In the pumpkin the corolla is all in one piece forming a beautiful yellow funnel. The corolla may, instead of one, be composed of several rows of colored leaves, as in a cultivated rose or the white water lily. On the other hand, the corolla may be wholly absent as in the flowers of the sugar maple; the calyx and corolla may both be absent as in our American sycamore and in the female flowers of birch; the stamens may be absent as in one kind of flowers in the melons, or the pistols may be absent as in the other kind of flower of the melons. When all parts are present in a single flower, the pistils and stamens may become mature at different times, thus insuring cross-fertilization, as in the pear. The successful fruit-raiser takes all these variations into account; for he has learned that in order to raise certain kinds of strawberries, grapes, pears, etc, he must so arrange his plants that there shall be a plentiful supply of ripe pollen when the pistils are ready for fertilization.

The apple blossom is illustrated in Fig 1524. If we look closely at the sections of flowers as shown a B and C, we shall note principal variations from the structure of the cherry flower. The apple, instead of one pistil as in the cherry, has usually five; and the pistils instead of sitting freely in the bottom of the cup of the stem as in the cherry, are fused with the cup of the stem in the apple. As the fruit begins to develop after fertilization, the stem cup as as well as the pistils, enlarges, carrying the rest of the flower on the rim of the cup for a short time; soon the corolla, the stamens and the upper parts of the pistils fall off, but the calyx remains even upon the ripe fruit.

Of a quite similar origin to the apple are the pear and quince. The fruit of the apple, pear and quince is therefore a swollen stem or axis enclosing the base of