these rootstock buds is subtended by a small scale-like rudimentary leaf.

Flower Buds.

The shoot increases in length considerably each season except that in which it bears berries. At the end of the summer preceding bearing, a large bud is formed at the apex of the shoot, and this, when laid open, is found to contain the rudiments of the next year's blossom. At the beginning of the following spring, this bud expands, and the bud-axis elongates slightly, so as to separate the flower-buds, now fully formed. Since next year's flower-buds are already on the shoots at picking-time, it is evident that any injury to them will affect the crop by reducing the number of blossoms.

It is evident from these facts that at the close of the season three classes of shoots can be distinguished; those which have flowered during the summer just past and now bear berries; those which are terminated by the large flower-bud, and will bear next season's crop; and the one and two year-old shoots, which now have simply a small leaf-bud at the tip. These last will in the course of a few years be the berry-bearers, while the shoots which now are fruiting will have died.

Flowers.

The flowers begin to open in southern Newfoundland during the first week in July, and have nearly all dropped by the 25th of that month. The plants in sheltered situations are the first to bloom, while those that are exposed to the full force of the wind are later. A flower remains open for about a week, and occasionally for as much as two weeks, if it is not exposed to high winds or beating rains.

At opening time, the flowers, which are spirally arranged upon their axis, have twisted around so that as the upper part of the shoot assumes an inclined or horizontal position, the bells of all the flowers open downward. This is important, as it assists in the liberation of the pollen.

The number of flowers in a cluster varies from two to fifteen, the most common numbers being five and six.

POLLINATION.

In order to understand the mechanism of the flower, it is necessary to go into some details of structure.

Let us begin by cutting the flower lengthwise through the stalk. The conspicuous part of the flower is formed of two cups, the outer being the calyx, while the inner and larger one is the corolla, which is pinkish-white in the open flower. These parts, though showy, are not essential to the production of seed, which is the true purpose or function of the flower. Those organs which are essential are situated within the corolla, and are of two sorts. In the center is an assemblage of organs, known as the pistil, the basal part of which is a hollow case, the ovary. In this are small bodies, the ovules, which are the rudiments of seeds. Between the pistil and the corolla stands a circle of stamens. These produce in their box-like tips, a yellow powder, the pollen, which at flowering-time falls out through the long horn-like appendages. To produce seed, it is necessary that pollen grains should fall upon the receptive spot, the stigma, where the grain germinates, sending out a tube which penetrates into the ovary and comes in contact with the ovules. There the contents are discharged into the ovule, fertilizing it, and stimulating the growth of the ovule into a seed. This in turn causes changes in the ovary wall which result in the conversion of the ovary into a berry. Unless the pollen is brought into contact with the stigma, no seed, and consequently no berry will be formed, but the corolla will drop off, leaving the infertile ovary hanging on the stem, unchanged in size or substance. This too finally falls away. It is evident, therefore, that a thorough knowledge of the conditions which influence pollination is necessary to an understanding of the factors which control the size of the crop.

It is in general true (though not without exception), that plants are unable to produce fruit unless they have been pollinated: and often pollen from another plant, or from another flower