

other flowers can compare with Dutch bulbs in variety and brilliancy of color. The secret of their accommodating nature lies in the fact that within the hyacinth or tulip every petal of the coming flower is already stored. During the five or six years of its life in Holland, all the capacities of the bulb have been steadily conserved, and we have but to unfold its beauty, aiming at short growth and intensity of color. Of course, there is an immense difference in the quality of imported bulbs; they vary according to the character of the season. The most successful Dutch growers cannot ensure uniformity in any one variety, year after year, because the seasons are beyond human control. But those who regularly visit Holland can always obtain the finest roots of the year, although it may be necessary to select from many sources.

Such bulbs as Lilies, Iris, Moubretia, Hyacinths, and Alstroemeria, suffer in deterioration after the first year's flowering. Indeed, it will be the cultivator's fault if they do not increase in number and carry finer heads of bloom in succeeding years. As outdoor subjects, some of them are not yet appreciated at their full value. Magnificent as *Lilium auratum* and *L. Lancifolium*, Album, and Rubrum must ever be in conservatories, they exhibit their imposing proportions to greater advantage and their wealth of perfume is far more acceptable, when grown among handsome shrubs in the border. Very little attention is needed to bring them along year after year, in ever increasing loveliness. I doubt if there are many readers of *The Canadian Horticulturist* who have seen the workings of the bulb industry of Holland. The writer feels at this point that a few remarks would be of great service after having held a position with a noted Holland grower on a two hundred-acre bulb farm, and with four acres of glass for the early production of flowers.

#### CLASSIFICATION OF BULBS

Bulbs are classified as parents, and they are graded as first, second, and third size parents, so that each three year is the lengthy period for the bulb, although each year some acres are lifted. Most of the work is done by the plow, which works very easily on the Holland silt. At most places the silt is only four inches deep, the subsoil being hard cement rock. I have seen some hundreds of acres of land without a stone or a hard piece of earth.

The bulbs are planted with the plow, women and girls being largely employed. The women work about twenty-five feet apart, and as the plow turns over the spit, the women plant the bulbs in the furrow. Then each one waits for the plow to come back again so that she can plant her allotted piece again. When

the planting is completed the fine harrow and roller are used and the surface becomes as flat as a table. This applies to daffodils, narcissus, and tulips. When the bulbs make their appearance, artificial manure is sown broadcast. It is a grand spectacle to see a large staff of girls with their long digging forks, turning the top right over. The Dutchman has a special fork that enables the prongs to go in only a certain distance.

The first year the bulbs are put down, a crop of turnips is often grown, as the importance of the bulbs is not reckoned on until the second year. Lifting is done by means of the plow. They are thrown into nets, taken to the warehouse to be weighed, and after being dried are hand-picked by women into three sizes.

Space does not permit me to dwell upon so lengthy a subject. I should like to mention that it may surprise the reader as to the time it takes to put up these orders for all parts of the globe. The Dutchmen have a stock size board. The same weight of the same size of bulbs will contain the same number of bulbs. The weights are put to the particular size and the order is executed by weight. For instance, at any bank in England, if one wants twenty pounds in gold, it is weighed and the count is correct.

Another question may arise, what do they do with their flowers? In the early part of the year, when narcissi and daffodils are scarce on second size stock, women go with carts and crop all the buds. It is an amazing sight to see five or six cartloads of buds coming across the fields to be stood in vases of warm water and placed in a temperature of 85 degrees with steam, to burst open for markets on the Continent.

A word as to the greenhouse department on one of these bulb farms. The commercial line is one of the greatest importance. Unless one can see the workings of that enterprise, these few rambling remarks will prove but a poor description. When I say that I have had sixteen women, with men and boy helpers, for six weeks boxing, the extent of the industry may be realized. At times three thousand boxes, three feet by two feet and three inches deep, are laid out and covered with ashes.

When forcing bulbs in Holland, record is kept of the time at which the bulbs go in the houses, also the temperature of each house, three times a day, together with the outside temperature, velocity of the wind, and weather forecast. This procedure is essential during the flowering period, as the strength of the bulb is kept up to a pitch. Tulips are forced in Holland simply by placing the boxes on benches covered with straw.

The industry is a profession by itself

--one that needs careful study. On the farm where the writer was, some two hundred hands were employed. Everything was kept scrupulously clean. Cleanliness is their motto. The greenhouse walls, pipes, and four acres of glass were washed by girls and men. To go around at the night time through twelve large houses, each full of bulbs, with thermometers at both ends and the middle and to record all temperatures and weather conditions is by no means an easy task during the bulb season.

#### Roses from Cuttings

With proper greenhouse conditions, roses can be propagated from cuttings at almost any season of the year, although the summer months are not preferred. To get good results from cuttings of any kind bottom heat is usually necessary. At the same time the air temperature must be comparatively cool. A temperature of sixty-five to seventy degrees for the former and fifty to fifty-five degrees for the latter gives the best results.

Florists propagate most of their rose cuttings during the winter months. During that time the greenhouse temperature is not too high and bottom heat can be applied to the cutting bed by a steam heating system. If the greenhouse temperature becomes too high, the buds start out before the cuttings are properly rooted and failure results.

In the case of roses that are grown out of doors, cuttings four or five inches long and of the new wood are cut in the late fall when the plant has become fully dormant. These may either be buried in sand for several weeks until the ends become caloused, or they may be placed directly in the cutting bed. Sand, three inches deep, and firmly packed, makes the best bed. The cuttings are placed in the sand with only one bud above the surface. Bottom heat is applied and the bed kept well watered. In from two to three weeks roots half an inch to an inch long will be formed and the cuttings are removed to three-inch flower pots. When the plants become too large for the small pots they are transplanted to more suitable quarters.

Cuttings from roses that grow in the greenhouse during the winter are handled in much the same way. Sometimes one leaf is left on and other times the leaves are removed. For the amateur, who grows roses entirely out of doors, the best method is to take the cuttings of the new wood in the early spring while the plant is still dormant. These may then be started in an ordinary hot bed, the bottom heat being obtained by the use of horse manure. Sand is the best surface material. The bed must be kept well watered and on warm days the sash should be slightly raised to prevent the temperature from becoming too high. When the cuttings are properly rooted they can then be potted.