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United States Department of Agriculture,

DEPARTMENT CIRCULAR 65.

Contribution from the Bureau of Plant Industry,

Office of Congressional Seed Distribution,

WM. A. TAYLOR, Chief.

DISTRIBUTION OF TULIP AND NARCISSUS BULBS IN 1919.

DIRECTIONS FOR PLANTING.

The bulbs sent are of two kinds—(1) tulip and (2) narcissus. (Figs. 1 and 2.)

These bulbs should be planted in friable rich soil, devoid of rank and unrotted or poorly incorporated manures. It should be dug to a depth of 12 to 15 inches. The tulip bulbs should be set 5 inches



FIG. 1.—Bulb of tulip.



FIG. 2.—Bulb of narcissus.

apart and 4 inches deep and the narcissus bulbs about 10 inches apart and 5 inches deep. The tulips should be planted some time during October, preferably about the middle of the month. The narcissuses should be planted some time between the middle of September and the last of October, preferably about the first of October.

If they are to be grown in pots or window boxes, light, rich soil should be used. Place 1 to 2 inches of cinders or broken pots in the bottoms of the pots or boxes to insure good drainage. After planting, place the pots or boxes out of doors and cover them with about 4 inches of ashes or sand; or they may be placed in a dark cool room or cellar for a few weeks, until the bulbs have formed a quantity of roots. They may then be brought into the light and heat for flowering. Keep the soil well moistened from time of planting, but avoid overmoistening, for if kept too wet the bulbs will decay.

CULTIVATION.

If planted in beds, the surface of the soil should be loosened after each rain and the bed kept free from weeds. In the late fall or early winter months it is well to cover the beds with a light mulch of straw or leaves to prevent injury to the young roots from the alternate freezing and thawing of the soil. This mulch should be gradually removed in spring, as soon as growth appears above ground. The bulbs are quite hardy and are not injured by severe cold if the soil is well drained.

LIFTING AND DIVIDING.

Tulip and narcissus plants are perennial, and if given proper care and grown under suitable soil and climatic conditions will increase and multiply from year to year. The bulbs may remain in the ground two or three years, or until the clumps begin to crowd. After blossoming in the spring, from six to eight weeks should elapse to allow the foliage to die partially down, when the bulbs may be lifted with a spade or fork. Shake the soil from the roots and store the bulbs in a cool, shady place where they will ripen and cure. When the old leaves and roots are thoroughly dry they may be easily rubbed off and the clusters of bulbs divided. The bulbs may then be planted in the same manner as the original bulbs. In this way the stock may be increased in a few years. It is seldom advisable, however, to leave tulips undug.

NATURALIZING THE NARCISSUS.

The narcissus often becomes naturalized when planted in the sod or partial shade, where it will continue to grow, blossom, and multiply for many years without further attention. Simply make a small hole in the soil 5 or 6 inches deep, insert the bulb, pointed end up, press the soil over the top, and nature will do the rest. For naturalizing, avoid planting in rows or rigid geometrical figures. A good plan is to scatter the bulbs like seed and plant where they fall. This method of planting is extensively followed in the home grounds and parks of England and of countries in Europe. In portions of North Carolina, on large estates along the James River in Virginia, and in old gardens in New England, narcissuses that were planted over half a century ago are still growing vigorously and every spring produce beautiful displays of blossoms.

VARIETIES.

Several hundred varieties of both tulip and narcissus are listed in the catalogues of florists and seedsmen. Narcissus is the botanical name for the genus of which the daffodil and the jonquil are species.

The narcissus with large trumpets and flat leaves is commonly called the daffodil. Jonquils have glossy, dark-green, very narrow, three-cornered, or rushlike leaves. Most of the intermediate forms are hybrids. New varieties are originated by growing bulbs from seed resulting from crossing one type with another. This is a slow process, as several years are required to produce a mature bulb from seed.

DESCRIPTION OF VARIETIES.

The following Holland bulbs are included in the congressional distribution:

TULIPS.

So many varieties of tulips (fig. 3) are included in the distribution that it is not practicable to give a detailed description of each. The varieties are, however, conveniently grouped into the following categories:

(1) A mixture of varieties well adapted for bedding, and most of them for early forcing as well.

(2) A mixture of varieties of single late tulips, including a few varieties of Darwins. These are considered mainly bedding tulips.

(3) A mixture of standard commercial varieties of Darwin tulips. These are nearly all large, robust plants, and many are adapted to both bedding and forcing. This group of tulips is gaining in favor yearly in this country. The Darwins as a class are the most robust of all the tulips, and when properly treated are really massive in stem, flower, and leaf. They are especially adapted for bedding, although of late years several of the varieties are being forced with good results. Being very vigorous, they thrive under more adverse conditions than most of the other forms and are seldom disappointing. There are many varieties, and the colors range from a very dark maroon through various shades of yellow, red, and purple to white, but there is almost no danger of clashes in mixtures of varieties as there is in other classes of tulips. The Darwins are among the latest of the tulips coming into blossom usually in early May in the southern portion of the United States. For growing in that part of the country, the Darwins are to be preferred to the early tulips.

(4) A mixture of bizarre varieties—those peculiar bronze-hued forms little seen in this country.

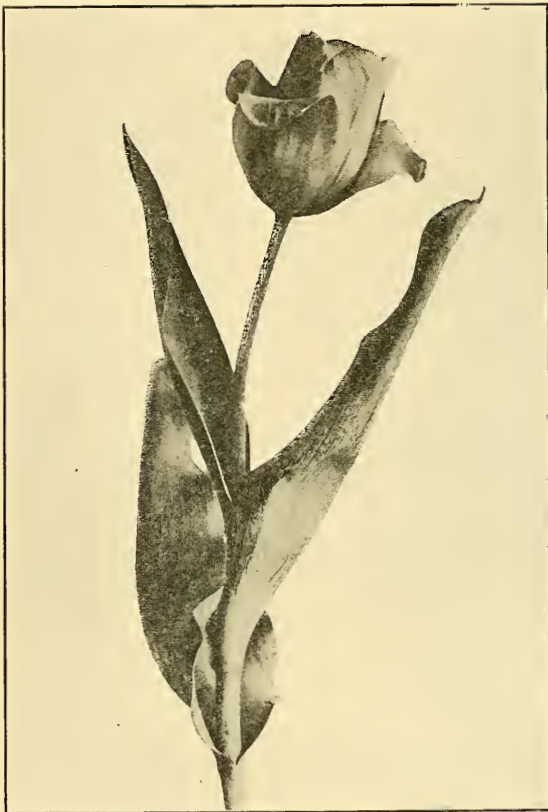


FIG. 3.—Blossom of tulip.

NARCISSUSES.

Barrii Conspicuus.—This narcissus has a large soft-yellow perianth and a short or intermediate form of cup, edged with orange scarlet. (Fig. 4, b.)

Sir Watkin.—This giant Welsh daffodil has a bold, large chalice cup flower of sulphur and orange yellow and where well grown stands fully 18 inches high.

Victoria.—This is one of the best of the bicolor trumpet varieties, having a large flower with white perianth and large yellow flaring trumpet.

Empress.—Another bicolor trumpet, an old favorite standard variety, with longer and narrower trumpet and purer white perianth than the *Victoria*.

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Double Von Sion.—The common yellow daffodil and is extensively forced for winter decoration in this country. It is of no value after the first year except in the North Pacific and Atlantic coast sections, and possibly in the Great Lakes region.

Princeps Maximus.—Another long-trumpet, early variety which forces well, but the flower does not last as well as the others.

WHERE DUTCH BULBS ARE GROWN.

Tulips and narcissuses, as well as hyacinths, are known generally as Dutch bulbs, because the growing and marketing of these bulbs is one of the principal industries of the Netherlands. Bulbs are also grown extensively in southern France, in England, Ireland, and the island of Guernsey. Most of the bulbs sold by florists and seedsmen in the United States are imported directly from the Netherlands, the annual importations amounting to nearly a million dollars in value. Tulips and narcissuses can be propagated and grown successfully along the Atlantic and Pacific coasts and in the region of the Great Lakes, but owing to the cost of labor only comparatively limited areas have been planted. The largest areas devoted to the grow-



FIG. 4.—Blooms of Emperor (*a*), Barrii Conspicuus (*b*), and Poeticus Ornatus (*c*), representing the three principal types of narcissus, with large, medium, and small crowns, or trumpets.

ing of these bulbs on a commercial scale in this country are to be found in this vicinity of Portsmouth and Richmond, Va., Hoxsie, R. I., Newbern, N. C., Bellingham, Wash., Eureka, Cal., and Santa Cruz, Cal.

In order to encourage the growing of Dutch bulbs in this country on a commercial scale and to provide American-grown bulbs of superior quality for congressional distribution, the Department of Agriculture established a bulb-propagating garden near Bellingham, Wash., where the conditions of soil and climate are similar to those in the Netherlands. The experimental work carried on at Bellingham in connection with the propagation, cultivation, harvesting, storing, and planting of these bulbs has been very satisfactory.

R. A. OAKLEY,
Agronomist in Charge.

JULY 31, 1919.