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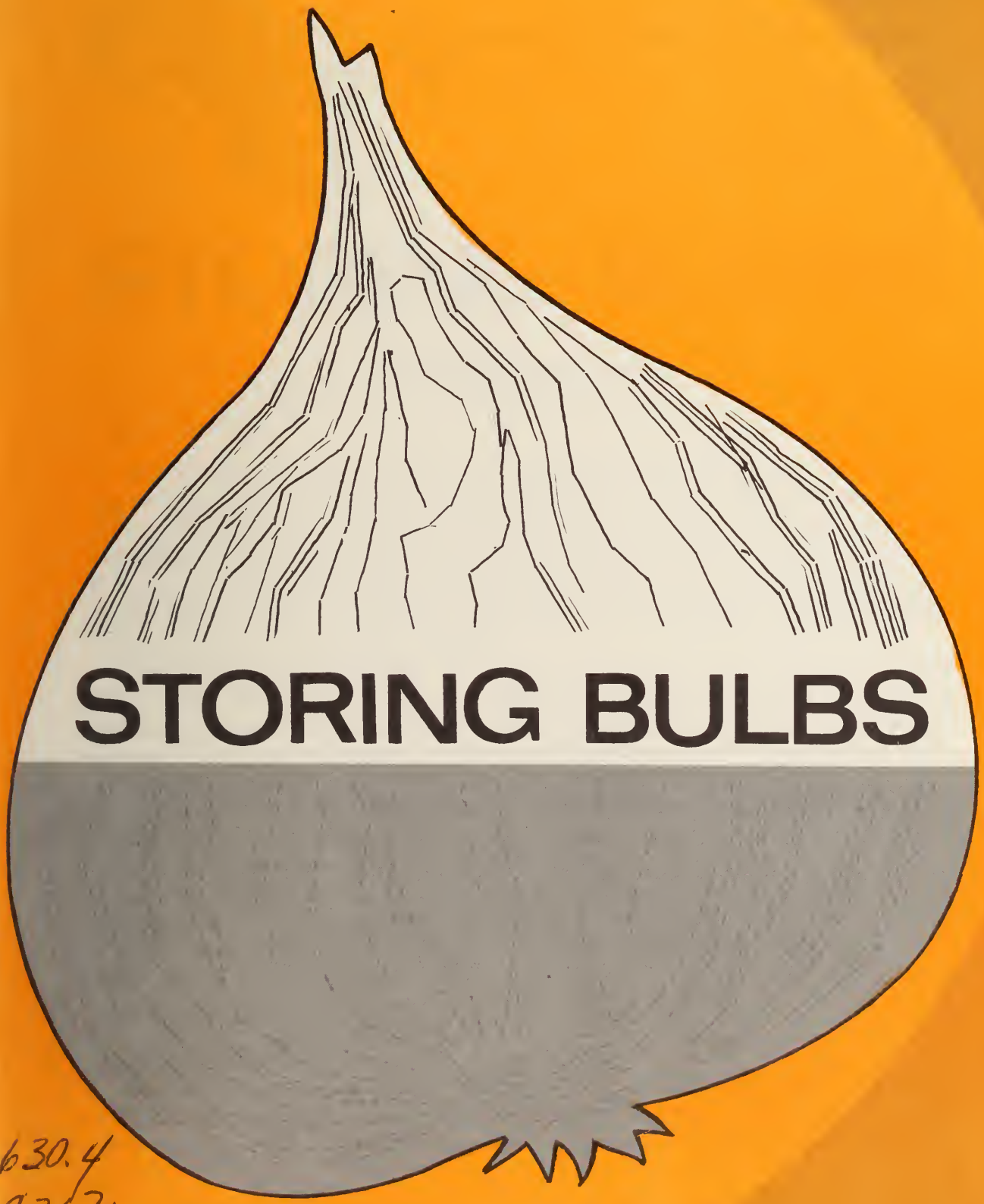

STORING BULBS

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STORING BULBS

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Bulbs[1] for Canadian gardens may be classed as hardy sorts that can be left in the ground over winter and tender ones that must be lifted in the fall and stored indoors. The climate of Canada is so varied that the ratings for Ottawa, used in this publication, do not apply in all areas. For example, daffodils are generally hardy at Ottawa but not on the prairies; and florists' anemones, which have to be lifted and overwintered indoors in Ottawa, can be left in the ground in southern British Columbia and in the area near Lake Erie.

Most hardy bulbs bloom in the spring, but a few, such as fall crocus, bloom later. Unless otherwise directed, plant hardy bulbs in the fall, at least four weeks before the ground freezes, so that the roots can become established. According to tests at Ottawa and at Morden, Manitoba, winter damage is more severe when bulbs are planted after October 15 than when planted before September 15.

Tender bulbs bloom during summer or fall. Plant them when the risk of frost is over, usually between May 15 and June 1 at Ottawa. Lift them in the fall as soon as the tops turn brown or have been wilted by frost.

Proper digging, harvesting and storage of bulbs are fundamental to the successful culture of the plants. The procedures are described under the heading of the particular plant, unless reference is made to another plant requiring the same treatment.

HARDY BULBS

Narcissus and Daffodil

In areas where they are hardy, the narcissus and daffodil can be left undisturbed until the clumps become overcrowded and the flowers small. The number of years they may be left in the ground depends upon the particular cultivar and the

[1] In this publication the term "bulb" is often used in a general sense, and may refer to tubers, corms, or rhizomes.

location in which it is planted. At Ottawa in semi-shade one variety, Glory of Sassenheim, has grown in the same clump for fifteen years and it still produces a good crop of sizable bloom.

Dig the bulbs after all the foliage has turned brown, dry them and store them in a cool, well-ventilated place, such as a garage or shed, until August. Sometime during this period, when the bulbs are thoroughly dry, clean and divide them. In early September, plant the large bulbs in the border and the small ones in an area where they may be allowed to develop for another year.

Tulip

Unlike narcissus, tulips deteriorate rapidly after three years and they should be divided regularly every two or three years. Wait until the foliage has died down before digging the bulbs, then store them in flats in a dry garage, shed or attic. When the bulbs are thoroughly dry, remove the older roots from the bulbs, clean and grade them and store them again until September. Bulbs 7/8 inch (2.2 cm) or more in diameter will likely flower again the following year. Smaller bulbs should be replanted in nursery rows.

If the space where tulips are growing is needed for annuals, dig the bulbs while the foliage is still green and the flower has faded, and transplant them bodily, with roots, soil and foliage attached, into trenches 6 inches (15 cm) deep. Cover the roots and allow the plants to die down naturally. They may then be dug as usual and the bulbs dried and stored.

Other hardy bulbs

Other hardy spring-flowering bulbs such as *Muscari, Crocus, Scilla* and *Chionodoxa* seldom need digging but can be treated the same way as recommended for narcissus and tulips.

TENDER BULBS

Achimenes

These are plants that are normally grown in pots, patio containers and window boxes in the shade. They are dormant from late summer until March or April. During this period, store the little caterpillarlike rhizomes in dry sand at a temperature of 45 to 50°F (7–10°C) or store dry in the pots and containers. Start them into growth in pots in May and transplant them to their summer location at the same time as tuberous-rooted begonias, mid-May or early June.

Acidanthera

Dig, dry and store in the same way as gladiolus.

Agapanthus lily-of-the-Nile

As these are usually grown in large pots or tubs for decorating the patio or similar areas, they should be left in the containers and stored in the winter in a cool basement. Water two or three times during storage.

Anemone (St. Brigid and de Caen types)

These anemones produce tuberous roots, which should be left in the ground until late in the fall just before the time when the ground is likely to be frozen hard. Store them in dry vermiculite or peat moss at a temperature of 45 to 55°F (7–13°C).

Alstroemeria Peruvian-lily

Lift and store in a cool cellar through the winter, as for cannas.

Begonia (tuberous-rooted)

After the first frost dig the tubers, leaving as much soil on them as possible and the tops intact. Store them for about three weeks until the tops can easily be broken off. Then clean the tubers and pack them in vermiculite or dry peat moss. Store them dry at a temperature of 45 to 60°F (7–15°C) until late March or April, when it will be time to start them into growth again.

Brunsvigia josephinae Josephine's-lily

Like the *Agapanthus*, this is a potted plant with large fleshy roots that can be stored in winter and set out on the patio in summer. Store the pots in a cool place at 50 to 60°F (10–15°C) and water once or twice during the winter.

Caladium

Store these tubers in exactly the same way as tuberous-rooted begonias.

Canna

After the first frost, cut the stems back to ground level. Dig the roots, let them dry, and store them in a single layer in a box of sand or peat moss at a temperature of 40°F (4.5°C).

Crinum Bengal-lily

Treat in the same way as *Agapanthus* bulbs. Repot in early spring if they become overcrowded.

Crocosmia copper-tips (montbretia)

In favored locations such as the Niagara region or parts of British Columbia the corms may be left in the ground all winter. In other areas dig and store like gladiolus. They should be left in the ground until as late in the fall as possible.

Dahlia

Since these tubers should be stored for the shortest time possible, it is better to wait until the beginning of November before digging them. Of course, if a freeze-up appears probable you should dig them right away or else you will have difficulty in getting the tubers out of the ground. Removing the tubers from the soil should be done with great care, since it is very easy to break the brittle roots. Cut the stems to ground level and dig carefully around the plants with a digging fork. Then lift the clumps from the soil by prying with the fork. If possible, enlist the aid of a helper and use two forks, one on each side of the clump.

If the dahlias have been growing on heavy land, the soil may be left on the roots and the roots stored on a cool basement floor, either as they are or in boxes, but without removing the soil. In this way they will certainly keep until spring. If the soil is light and sandy it will fall away from the tubers as soon as they are lifted and some other means must be adopted for storage. Take the clumps down to the basement, leave them to dry for at least a couple of weeks, then place them in a carton and cover them with vermiculite. Leave the tubers in a temperature of 35 to 55°F (1.5 to 13°C) until April, then move them to a warmer place to start sprouting. About the middle of January it is a good idea to inspect one or two of the tubers to see how they are coming through the winter. If they are very dry and there is danger of them shriveling it might be well to sprinkle them with water.

Eucomis pineappleflower

Dig and store with roots intact in vermiculite.

Galtonia Cape-hyacinth

Dig and store in the same way as gladiolus but, to prevent desiccation, embed the bulbs in sand or vermiculite.

Gladiolus

Gladiolus corms may be dug either after a severe frost or before frosts have occurred. The main thing is to give them as long a growing season as possible and yet dig them before the ground freezes. If you have only a few bulbs, mid-October is usually a good time, but if the planting is large, an earlier start is advisable.

Because of an insect called thrips, which causes considerable damage to the flowers, it is necessary to take special precautions when digging and storing gladiolus corms.

Before digging, have boxes and labels ready in the garden, also some general purpose insecticidal dust. First loosen the bulbs with a fork on each side of the row, and then lift them with one hand while cutting the tops off close to the corms with the other. Place each variety in a flat and label it. As soon as one box is filled with corms, sprinkle a little insecticidal dust on them. This will ensure that no thrips flying about at the time of digging will lay their eggs on the bulbs. Take the flats to the basement and leave them in a warm airy place for a few weeks to dry.

When old bulbs come away from the new ones it is time to clean and store them. Clean off the old corms and the outer loose skin, but do not take off all the outer husk down to the fleshy corm. If you are going to propagate new bulbs, save all the small cormels that adhere to the old corms for planting next year.

As the corms are cleaned they should be dusted as well. To do this, place a teaspoonful of insecticidal dust in a 10-lb (4.5-kg) paper bag and half fill it with cleaned corms. Then shake the bag thoroughly and take out the bulbs. This quantity of dust should be sufficient for 25 corms. Store the clean bulbs in flats placed one on top of the other with blocks of wood between them to allow a circulation of air. If possible they should be placed in a storage room with a temperature of 40 to 50°F (4.5–10°C).

Gloriosa glory-lily

Dig up in the fall and store the fingerlike roots in dry sand or peat moss at a temperature of 50 to 60°F (10–15.5°C).

Hymenocallis (Ismene) Peruvian-daffodil

Store in dry sand or vermiculite at a temperature of at least 55°F (13°C) but not warmer than 65°F (18°C).

Polianthes tuberose

Dig in the fall and store at a temperature of 68 to 70°F (20–21°C). Start these in early April indoors in pots.

Tigridia Mexican tigerflower or shellflower

These are not easy to store if treated like gladiolus, as is so often recommended. It is best to dry them thoroughly in a well-ventilated room at a high temperature of 70 to 75°F (21–24°C). Then clean them and store them in vermiculite in a cool basement at 50 to 60°F (10–15.5°C). Do not divide the bulbs after drying unless the clumps are too large to handle.

Zantedeschia calla-lily

The white calla (*Zantedeschia aethiopica*), the pink calla (*Z. rehmannii* or *Z. r.* 'Superba'), and the yellow calla (*Z. elliottiana*) need to be stored through the winter in slightly moist peat moss. The tubers must not be allowed to dry out completely, so water them in January and again in March.

Zephyranthes rain-lily, zephyr-lily

Store in the same way as gladiolus. Start them into growth early in spring in pots for planting out later.

CONVERSION FACTORS FOR METRIC SYSTEM

Imperial units	Approximate conversion factor	Results in:	
LINEAR			
inch	x 25	millimetre	(mm)
foot	x 30	centimetre	(cm)
yard	x 0.9	metre	(m)
mile	x 1.6	kilometre	(km)
AREA			
square inch	x 6.5	square centimetre	(cm^2)
square foot	x 0.09	square metre	(m^2)
acre	x 0.40	hectare	(ha)
VOLUME			
cubic inch	x 16	cubic centimetre	(cm^3)
cubic foot	x 28	cubic decimetre	(dm^3)
cubic yard	x 0.8	cubic metre	(m^3)
fluid ounce	x 28	millilitre	(mL)
pint	x 0.57	litre	(L)
quart	x 1.1	litre	(L)
gallon	x 4.5	litre	(L)
WEIGHT			
ounce	x 28	gram	(g)
pound	x 0.45	kilogram	(kg)
short ton (2000 lb)	x 0.9	tonne	(t)
TEMPERATURE			
degrees Fahrenheit	(°F-32) x 0.56 or (°F-32) x 5/9	degrees Celsius	(°C)
PRESSURE			
pounds per square inch	x 6.9	kilopascal	(kPa)
POWER			
horsepower	x 746	watt	(W)
	x 0.75	kilowatt	(kW)
SPEED			
feet per second	x 0.30	metres per second	(m/s)
miles per hour	x 1.6	kilometres per hour	(km/h)
AGRICULTURE			
gallons per acre	x 11.23	litres per hectare	(L/ha)
quarts per acre	x 2.8	litres per hectare	(L/ha)
pints per acre	x 1.4	litres per hectare	(L/ha)
fluid ounces per acre	x 70	millilitres per hectare	(mL/ha)
tons per acre	x 2.24	tonnes per hectare	(t/ha)
pounds per acre	x 1.12	kilograms per hectare	(kg/ha)
ounces per acre	x 70	grams per hectare	(g/ha)
plants per acre	x 2.47	plants per hectare	(plants/ha)