

from the direct rays of the sun, (4) spraying to prevent damping-off and *Botrytis*, (5) adequate weeding or summer mulch, (6) adequate mulching over the winter in the north. Many lilies have seeds that germinate readily, sending up a green grass-like leaf a few weeks after planting. Among these are *L. formosanum*, *pumilum*, *regale*, *amabile* and about 20 others. In another group, however, the seed germinates below ground and forms a small bulblet the first season which must be chilled, usually over winter before the sprouts will appear above ground.

The soil for growing seedling lilies should be friable and fairly rich. Good success is obtained by using composted loam soil containing considerable well rotted cow manure. This may be difficult to obtain and a satisfactory mixture can be made of one part sand, one part loam and one part granulated peat or muck. Such a soil should be mixed well with a commercial fertilizer such as 5-10-5 at the rate of about 1 measuring cupful to the bushel. Of course, leaf mold or well rotted manure may be used if they are available. Soil sterilization is a decided advantage but can usually not be done by the amateur.

Seedlings may be grown either in flats in the greenhouse or cold frame or in the open field. Seeds of species that send up shoots the first season can be planted in early spring in flats or cold frames in the well prepared soil described above. The seeds may be planted in rows or broadcast over the surface. Scarce or valuable seed may be carefully spaced in the flat with a spotting board.\* Seeds should be covered  $\frac{1}{4}$  to  $\frac{1}{2}$  inch deep with finely sifted mixture of  $\frac{1}{2}$  sand and  $\frac{1}{2}$  muck or granulated peat.

After germination the lily seeds must not be allowed to dry out at any time. In hot, dry weather it is therefore essential that the plants be watered daily and that at all times the young seedlings should be protected from the hot sun. A lath shade over a cold frame or a covering of light cheese cloth is satisfactory. On dark days and the times of excessive moisture the shade may be removed to allow for better aeration as under excessively moist conditions the shade favors the development of *botrytis* and damping-off. In the young stages of growth before the first true leaf is formed the seedlings are particularly susceptible to damage from disease.

Damping-off is controlled by dusting the soil thinly with copper carbonate. This should be done just as the seedlings appear above the surface of the soil. Applying copper carbonate with a salt shaker is a satisfactory method. When the seedlings have their first leaves and before signs of *Botrytis* appear the beds should be sprayed with Bordeaux mixture prepared after the manner described later in the BULLETIN.

The plants, of course, should be kept reasonably free from weeds and during the first winter flats or the seed beds should be covered with a mulch of clean marsh hay, straw or shredded peat. The beds should be examined during winter to detect the presence of mice, as these rodents may become very troublesome under a mulch and may destroy large quantities of bulbs. The mice may either be trapped or poisoned.

When the bulbs have attained a size of  $\frac{1}{4}$ " to  $\frac{1}{2}$ ", which will occur at the

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\*See American Horticultural Society Yearbook, 1940, for details.