

center and may develop a gray mold on the surface made up of the fruiting structures of the fungus. If infestation is severe the spots enlarge to include the whole leaf and under some conditions whole plants are practically destroyed. At its worst whole beds of *L. canadense* or \times *testaceum* may be reduced to brown shapeless stalks. Small spots on leaves do not disfigure the plant much, but on flowers and buds unsightly distortion results.

The *Botrytis* fungus over-winters on dead lily stalks and leaves and also on the rosette leaves of *L. candidum*. Spores are shed in the spring and are splashed by the rain or fly through the air to new plants. The seriousness of the infection is dependent upon weather conditions. Prolonged cold rainy periods, frequent showers, heavy fogs and dews all favor the development of the fungus in providing the water droplets on the leaves which are necessary for spore germination and the penetration of leaf tissues by the fungus. Lilies planted in low shady places which lack drainage or air movement are more apt to be affected by *Botrytis* than those planted in more open locations. The most susceptible species should never be planted in such locations and gardens with no better place should confine themselves to less susceptible kinds.

Control.—Sanitation will decrease the number of fungus spores available for early infection. This consists of the destruction of dead lily debris in the fall which will reduce the number of overwintering fungus fruit bodies (sclerotia). The systematic removal of all diseased leaves during the growing season will improve the appearance of the plants and reduce the number of spores for late infection. All such debris should be burned. Many careful gardeners practice such control measures whether they have the disease or not, but sanitation alone is not sufficient if weather conditions favoring the disease prevail.

Fungicides offer the best means of controlling this disease. Bordeaux mixture spray 4-2-50 or copper lime dust both give good control without causing injury to the plants. The 4-2-50 formula is made up as follows: Dissolve 4 oz. of crushed or powdered copper sulfate in one gallon of water. Mix 2 oz. of hydrated lime in two gallons of water. Pour the lime water into the copper sulfate solution stirring vigorously and use it at once as it deteriorates on standing. Copper-lime dust must be applied when the foliage is wet. Either of these fungicides is a very good protectant but they should be applied before infection takes place and applied often enough to keep the new growth covered. In dry seasons two or three applications will suffice on even the most susceptible lilies. In wet rainy periods weekly or bi-weekly applications may be needed. Several light applications are better than one or two heavy doses. Spraying should be done before rainy periods rather than after.

A third important lily disease is known as basal rot. It is probably much more common than is ordinarily supposed and accounts in part for the disappearance of bulbs in the garden and for weak, unsatisfactory growth generally. It is particularly damaging to *L. candidum*, \times *testaceum*, *bulbiferum* and its variety *croceum*, *formosanum*, some of the Preston lilies and the Backhouse hybrids. The disease has probably been the limiting factor in the commercial production of the highly prized hybrid \times *testaceum*.

Foliage symptoms are not consistent with this disease but a yellowing or purpling of the leaves and a stunting of stem growth often follows basal rot infection. Plants which are doing poorly for no other apparent reason will