

Culture is the same as for tuberous begonias, but many shoots may be left to each tuber and no disbudding is needed.

**Gloire de Lorraine Begonias**

The winter-flowering Gloire de Lorraine begonias are comparatively little known in New Zealand. They have thin, wiry stems, a compact bushy habit of growth, and when well grown are completely smothered in small flowers in late autumn and early winter. The variety Gloire de Lorraine from which the group takes its name has pink flowers and is the one most frequently seen. Other varieties have white, deep pink, and carmine flowers. The leaves are almost circular, shining, and are usually pale green except in some varieties which have a reddish tinge.

As Gloire de Lorraine begonias are infertile hybrids, they can be propagated only by vegetative means. Ordinary stem cuttings or leaf cuttings may be used. They are usually taken soon after flowering is finished in late winter or may be left until early spring and are rooted in sand or a mixture of sand and leafmould. Unless bottom heat is available, rooting may not be satisfactory, especially if the cuttings are taken early.

Leaf cuttings usually make the best plants. The leaves should be cut off with an inch or more of leaf stem. The new plant rises from the base of the stem and not from the leaf as in Rex begonias. The stem should be inserted into the rooting medium to about half its length. After rooting they can be potted up into 3 in. pots, but potting should not be done until the shoot has also developed. The potting compost recommended for tuberous begonias is suitable.

During summer they require some shade, moderate temperatures, and not too much water. To keep them growing strongly a little liquid feed may be given, but overfeeding will cause weak sappy growth. By late autumn they should be in the pots in which they will flower. A well grown plant will fill a 7 in. or 8 in. pot or pan. The new shallow pots make excellent containers. Staking is usually necessary and the best way is to insert some very thin canes round the edge of the pot and tie them together to form a low cone. This will hold the plant up with the minimum of tying and it will form a dense, compact mass. Heat in late autumn-winter is desirable in all but the warmest districts. A minimum winter temperature of 50 to 55 degrees F is required.

After flowering they should be cut back to about half their height and watering reduced, but they should not be dried off. The stems and leaves

removed may be used as cuttings, but better stem cuttings will be obtained from the young growths in spring. When growth begins the old plants will need repotting. Plants are not usually worth keeping after three years, the best display being given by plants in their second year.

**Other Species**

A little-known summer-flowering kind which is sometimes available is the hollyhock begonia. There is a little doubt about its correct name. It is usually known as *B. martiana* or *B. gracilis martiana*. Other similar varieties with which it could be confused are *B. gracilis annulata* and *B. gracilis diversifolia*.

It is a tuberous kind which produces a single upright stem 2 to 3 ft high. The pink flowers about 1 in. across are clustered all the way up the stem, hence its common name, and are borne for about three months. Culture is the same as for ordinary tuberous begonias. This group of begonias has the peculiar habit of producing clusters of six to 12 small tubers about 1/16 in. diameter in the axils of the leaves after flowering. These can be sown like seeds in winter in a heated glasshouse or in spring.

Another seldom seen species which is useful for glasshouse decoration in late autumn-early winter is *B. froebeli*. It grows to about 12 in. with large hairy leaves and loose drooping heads of bright scarlet flowers about 1 in. across. It is a tuberous species which is more or less dormant in summer. It is sometimes treated like an annual, for it grows readily from seed and will flower in one season.

The many varieties of fibrous rooted *B. semperflorens* are well known and used extensively as summer-bedding plants. Not so well known but becoming very popular are the double forms. The pink variety Gustav Lund or Westport Beauty has been available for some years and several other colours have recently been put on the market. They are just as easy to grow as the ordinary bedding types and can be used in the open garden or as pot plants in the glasshouse or indoors. They flower most of the year



[Welsh]

No glasshouse display of tuberous begonias is complete without some baskets of pendulous varieties.

round in frost-free areas or under glass. In cold areas they need winter protection. They are easily propagated by cuttings taken at almost any time of the year or by dividing old clumps.

Many other begonias grown primarily for their foliage also produce showy and attractive flowers. A number of these were described in an article in the December 1958 issue of "The Journal".

**Pests and Diseases**

Begonias are relatively free of serious pests and diseases. Rotting of stems and leaves of tuberous kinds can be serious where growing conditions are not good. At the seed-box stage overcrowding, overwatering, and too humid atmosphere make the young seedlings very susceptible to damping off. Later, high temperatures, humid conditions, too much shade, and poor ventilation cause a soft growth readily attacked by stem and leaf rotting fungi, particularly botrytis. Good growing conditions and hygiene are the best preventives. Thiram will help to control all these fungus diseases, but will not cure them.

Cyclamen mites sometimes are a serious pest. They are very small and can barely be seen with the naked eye. They cause serious distortion of the leaves and growing tips. Malathion is the best control. Mealy bugs and white flies may be controlled with DDT and aphids by nicotine sulphate.