

# The Tuberous Begonia

## Its Propagation and Cultivation in Ceylon

BY

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### INTRODUCTION

THERE are two types of Begonias in cultivation. One is the fibrous-rooted Begonia which is mainly cultivated for its beautiful leaves and the other the tuberous-rooted Begonia, the cultivation of which is dealt with in this article. Many inquiries have followed the successful cultivation of the latter in the Botanic Gardens, Hakgala.

The tuberous-rooted Begonia, named after M. Michel Begon (1638-1710) has advanced so much during the past 50 years that it bears very little resemblance to the original and now occupies the foremost position in green houses and gardens. It is found in every imaginable shade of Crimson, Scarlet, Rose, Pink, White, Yellow, Orange and Salmon and its lasting qualities as cut flowers make it admirable for sprays, wreaths and bridal bouquets.

The first begonias were singles and the first doubles raised were anything but beautiful. The blooms were small and the petals thin and of a dull red to sickly pink in colour. The plants themselves, were over three feet tall, scraggy, bearing scanty foliage.

All varieties of tuberous Begonias originated from six species, viz., *Begonia boliviensis* collected by Mr. Pearce in Bolivia in 1864; *Begonia Pearcei* also collected by him in Bolivia in 1865; *Begonia Veitchi* discovered by the same collector in 1867 near Cuzco in Peru at an elevation of 12,500 ft.; *Begonia Rosae-flora* imported from the Andes; *Begonia Davisii* discovered by Mr. Davis near Chupe in Peru in 1876 and *Begonia Clarkii* also from Peru flowered in England in 1867.

Credit for the development of present day tuberous Begonia by hybridisation goes to such veterans as John Laing, Henry Connel, Rev. E. Lascelles and his assistants C. F. Langdon and J. B. Blackmore.

### PROPAGATION

The tuberous-rooted Begonia can be propagated by seed as well as by cuttings. Seed is extremely small and very fertile. It has to be sown with great care on a level surface in a mixture of finely sifted leaf-mould and sand and maintained at a steady temperature of 65°F to 70°F until the plants are well established. The young seedlings with three to four leaves should be picked

out into 5 inch pots and subsequently into larger ones taking care not to disturb the root system. The reporting is best done by tipping off the plant from the pot with the ball of earth and transferring it to a bigger pot pressing firmly fresh soil in between the pot and the ball of earth. Plants may be fed occasionally with weak liquid manure obtained either by dissolving nitrate of soda or Sulph. of Ammonia 1 oz. to 3 or 4 gallons of water or cow-dung placed in a sack soaked in water overnight. The solution should be diluted to the colour of weak tea and used on a moist soil. This should be done when the plants are about to flower and when flowering.

Propagation by cuttings is mainly confined to rare double varieties and others worthwhile. Stem cuttings may be selected from side shoots towards the base of the main stem. They should be about 4 inches long and removed by two cuts with a very sharp knife one parallel to the main stem and the other parallel to the petiole of the leaf at whose axil the stem shoot is borne. The lowest dormant bud which would remain dormant until the following season and which would be the bud for the next seasons tuber should not be damaged. These cuttings may be potted up singly in 5-inch pots or in pans in a mixture of finely sifted leaf mould and sand and kept at a constant temperature in the shade. These cuttings should not be allowed to wilt lest root formation be retarded. In about 4 weeks the normal cuttings should have rooted but in the case of certain varieties it may take longer. Plants may also be raised by leaf cuttings. The leaf is removed with the heel, i.e., that portion of the stem containing a dormant bud and treated as for cuttings. In 10-14 days they would show signs of growth and a fortnight later they may be potted up into 5-inch pots in the usual mixture.

Certain varieties may also be propagated by spreading the leaf on its back on an even surface of finely sifted leaf-mould and sand and pinned on to the compost by means of wire bent to a shape of hair-pins, the midrib held down by the loop and cut sharp at points where it gives off lateral veins. It will be found that adventitious buds will develop at the first one or two cuts and small rootlets below. The percentage rooting by this method will be found to be very low.

### CULTIVATION

The tubers if imported from abroad should be rested for at least 5 days and planted in clean coarse sand in boxes about  $\frac{1}{4}$ " below the surface and watered to facilitate sprouting. Care should be taken not to overwater the tubers lest they rot nor allow them to dry up. The young shoots should not be allowed to remain wet. A constant temperature of 55°F to 60°F is maintained.

When the young shoots are about 1½ inches to 2 inches in height the tubers are potted into 10-inch pots in which they are intended to flower in the following mixture :—

4 parts medium loam	$\frac{1}{4}$ part crushed brick to which is
3 parts cattle manure (well decayed)	added per bushel
2 parts sand	5 oz. bone flour
1 part leaf-mould	2 oz. old soot
	1 oz. sulphate of potash

They are planted firmly at the same depth as in the boxes with a little sand immediately around the tuber and maintained at the same temperature under cover exposed to the morning sun.

Greatest care should be exercised in the administration of water to these plants. Watering should be at the roots preventing any water to come in contact with the young leaves and stems.

Any premature buds appearing at this stage should be picked off. Only one healthy shoot is allowed to develop with two other lateral branches arising from the base of the main shoot of the tuber and when they are about 12" in height the pots are placed in the Glass House at a temperature of 70°F. Weak liquid manure is given once a week from this stage onwards and the plant staked.

Care should be exercised in tying the plants to the stakes especially when in flower. A little cotton wool is placed where the string comes in contact with the tender stems. As far as possible damage to flowers, leaves and stems should be avoided in the process of tying up the flowers.

The plants remain in flower for about 3 months each flower lasting 3-4 weeks. The largest flower was about 8" in diameter.

After flowering, water should be gradually reduced and the stems and leaves allowed to dry and fall away. The tubers are finally removed from the pots carefully dried and rested until required.

The following varieties have been successfully cultivated in the Botanic Gardens, Hakgala. Of these the first twelve have gained awards of merit at the Royal Horticultural Shows in London.

1. Rhapsody—Dark pink and pale rose
2. Pamela Simpson—Yellow
3. Sunray—Light orange
4. T. B. Toop—Dark orange
5. Everest—White
6. Aurora—Light brick red
7. El Alamein—Red
8. Harmony—Light pink
9. Jasmine—Light yellow
10. King George—Dark red
11. Rose pearl—Pink
12. Salmonea—Deep orange
13. Lewis bond—Combination of salmon and apricot
14. Lionel Richardson—Salmon pink
15. Diana Wynyard—Slow starter, white
16. Hercules—Slow starter, salmon scarlet
17. Moon light—Creamy yellow

18. Primrose—Yellow
19. Priscilla Irwin—Salmon apricot
20. R. R. Anderson—Crimson
21. Lucy Dare—Pink
22. W. H. Wigley—Salmon orange
23. Mrs. J. B. Butler—Light salmon colour
24. Mrs. J. R. Mann—Rose pink.

### PESTS AND DISEASES

Generally in a Glass House the incidence of damage by insect attack is less than in the open. This is due to greater cleanliness and higher temperature. Thrips are known to damage the plants by sucking sap from leaves and stems and they may be controlled by spraying with the following nicotine wash :

- $\frac{3}{4}$  oz. Nicotine
- 1 lb. Soft soap
- 10 gallons water

Add the Nicotine after dissolving the soap stirring all the time.

Plants are sometimes liable to a leaf curl and in consequence are very slow in growth. This is due to a virus and the only remedy is to isolate and destroy the plants affected.

### CONCLUSION

The propagation and cultivation of the tuberous-rooted Begonia can be undertaken profitably in Ceylon especially towards Up-country from a point of view of supplying cut flowers to the local market not only on account of rarity but also of the lasting qualities of the flower.

### REFERENCES

1. Cobb, Arthur J.—(1938) Modern Gardencraft Vol. III. The Gresham Publishing Co., Ltd., London.
2. King, E. J.—The Propagation of Plants. Hutchinsons Scientific and Technical Publications.
3. Langdon, Allan G.—The Tuberous Begonia—Its development and culture—The Mendip Press, Ltd., Bath.



Fig. 3.—Another view of Begonias.



Fig. 1.—Tuberous rooted Begonias in the glass-house, Hakgala.

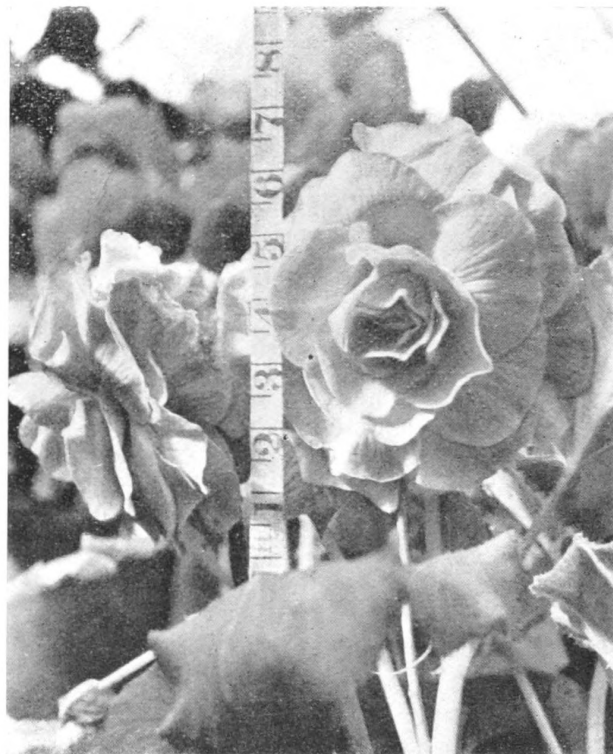


Fig. 2.—One flower of Begonia Rhapsody showing size.