

BEGONIA PROPAGATION

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Provided by The Carol Notaras San Francisco Branch of the American Begonia Society

Stem Cuttings

Stem cuttings are probably the least difficult method of propagation. It is a method of propagation that can be used for most all types of begonias. Spring is usually the ideal time to take cuttings. However, cuttings may be taken at any time throughout the year.

MATERIALS NEEDED-

1. **PROPAGATION CONTAINER:** There are many types that may be used for stem cuttings. Individual small plastic pots may be used for single cuttings. Larger plastic pots can be used when you are making several cuttings of one variety. If your growing area is not humid, it is best to use a large plastic box with a clear plastic cover. The size of this box would depend on the size of the cuttings you want to propagate in it. For the tender varieties it is always best to use a covered container. In all types of containers the rooting medium should be 2" or more depending on the size and type of stem cutting to be propagated.
2. **ROOTING MEDIUM:** This should be placed in the container you choose at a depth of 2" or more depending on the size and type of cutting your re propagating. The medium should be thoroughly wet and then drained so that there is no excessive water.
3. **SCISSORS, SHARP KNIFE or RAZOR:** Scissors are used for the smaller set cuttings. The knife is more satisfactory for the larger stem cuttings. Be certain that your know your scissor is absolutely clean before making a cut. A razor can also be used.
4. **CUTTINGS:** These should be taken from strong, healthy mature plants. The plant should be free from disease and insect pests.
5. **LABEL:** Plastic labels are usually the most satisfactory. The name of the variety and the date the cutting was made should be put on the label.

ROOTING MEDIUM - There are many excellent rooting mixes. The mix used should have good drainage and aeration qualities. If you have one that you have had good success with, continue to use it.

The **rooting medium** we have found the most successful for us is as follows:

1 part perlite

1 part vermiculite

These two ingredients should be well mixed before using. They need not be sterilized.

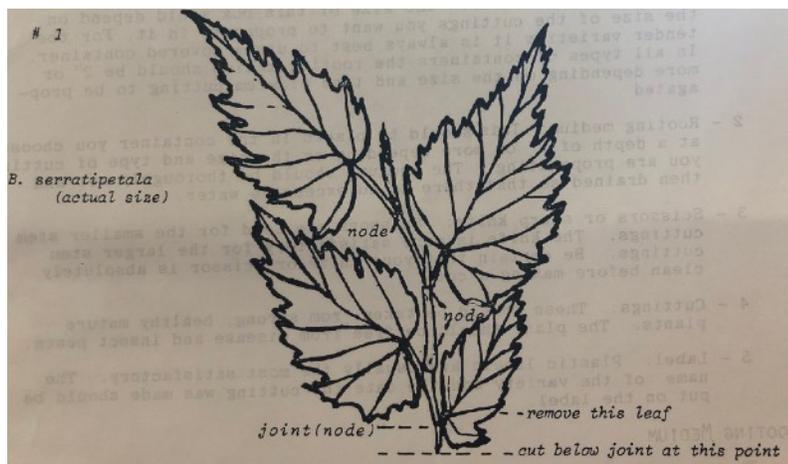
TYPES OF STEM CUTTINGS

1. Tip and basal stem
2. Rhizome cuttings
3. Mallet cuttings

Tip and Basal Cuttings

Tip stem cuttings are the most satisfactory method of propagation for cane like, shrub-like, semi-tuberous and in some cases for the tuberous varieties. The stem cuttings should not be taken from an old plant or woody plant. Some mixes have ingredients which must be sterilized before using. The plant should be healthy and vigorous. Tip cuttings may be taken from branches that are upright to trailing.

The cut should be made with a knife, scissor or razor making a very clean cutting on the diagonal. The cutting should have a least 2 joints (nodes) and the cut should be made just below a joint. The total length of the stem cutting should be at least 2" long. Remove the lower leaves from the cutting if they will be in the rooting medium. It is advisable to remove buds and flowers from the cuttings. However it is not necessary to do this. See Diagram #1



Insert the stem cutting in the rooting medium at a depth of 1/2" to 2" depending on the size of the cutting.

If you are propagating tender varieties or varieties that have very slender and delicate stems, it is best to put these cuttings in a plastic propagation container with a cover. Some of the varieties that we would suggest to propagate in a closed container are: *B. boissiana*, *B. foliosa*, *B. fuchsioides*, *B. plumieri*, *B. 'Maxwelton'* and *B. 'Weltonensis'*.

Basal stem cuttings are taken from the vigorous young shoots at the base of the plant. This type of stem cutting is mostly used when propagating the semperflorens types.

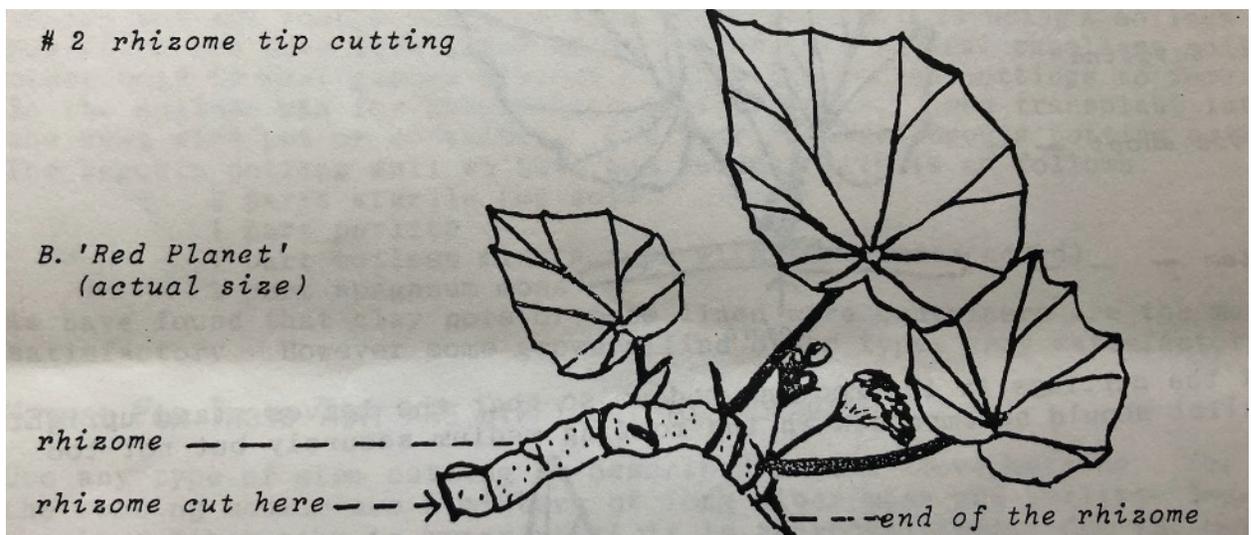
Stem cuttings will be rooted approximately two to three weeks in most cases. Some varieties will take a longer time. Do not transplant until there is a very good root system.

Rhizome Cuttings

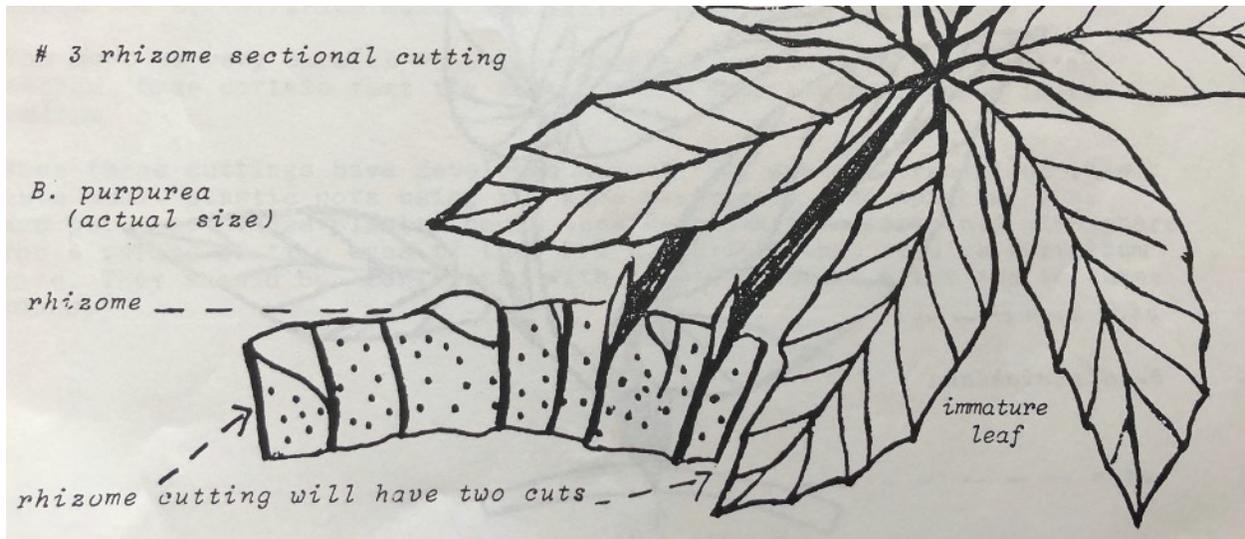
Most rhizomatous and rex begonias can be propagated very readily by using rhizome cuttings. Using this method you will get a mature plant in a much shorter period of time.

A rhizome is an enlarged stem. Some rhizomes are very large and others are very slender. There are some that grow parallel with the soil while others grow upright. Rhizome cuttings from either type can successfully be propagated.

Make certain that when the cutting is made the cut is a clean one. You can take the tip or sectional rhizome cuttings. Tip cuttings are taken from the pointed ends of the rhizomes. See diagram #2. The sectional rhizome cuttings are made by cutting rhizome into pieces from 1" to 3" depending on the size of the rhizome. See diagram #3. It is usually better to have a leaf or two on the rhizome cuttings.



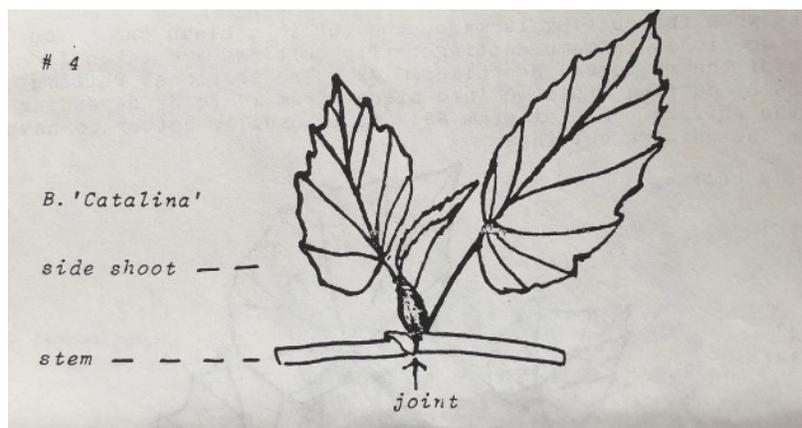
Insert the rhizome cutting in the rooting medium to a depth of 1/2' to 1' depending on the thickness of the rhizome. The rhizome cutting should be just barely beneath the surface of the rooting medium. It will take about 2 to three weeks for a good root system to develop.



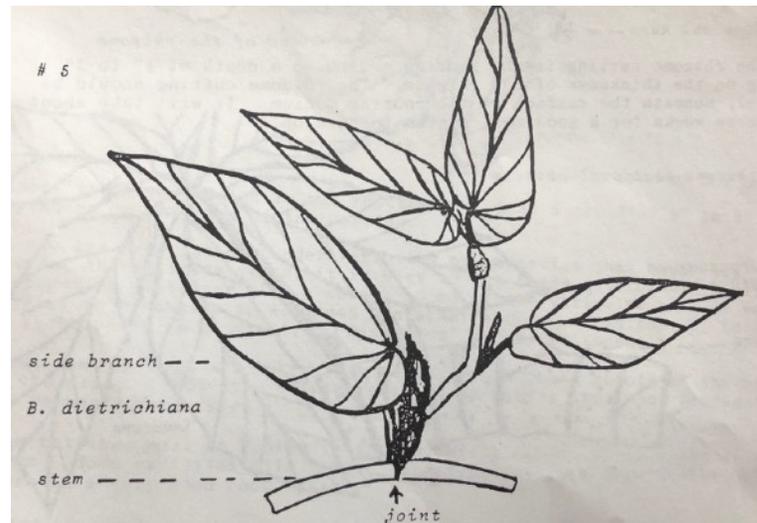
Mallet Cuttings

Mallet cuttings can be taken from most shrub-like and cane-like begonias. This method is particularly good for spreading types of plants. By using this method you can usually get more cuttings from your plant.

To make this type of cutting select a long stem that has developed side shoots or branches along the length of the stem. Cut the main stem on each side of the side shoots or branches. There should be about 1/2' of the main stem on each side of the side shoot or branch. See diagram #4 and #5.



Insert the cuttings in the rooting medium so that the leaves stand upright. The mallet should be embedded in the rooting medium securely but not too deeply.



CARE OF STEM CUTTINGS

These cuttings may be placed under fluorescent lights or in a location where there is a lot of light and some sunlight. However if you are propagating in a closed container to not put it where there is any direct sunlight or where there is intense heat.

Keep the rooting medium moist at all times. Do not allow the rooting medium to become soggy.

Cuttings should be well rooted within three to four weeks. You can test this by giving the cutting a very gentle tug. If it gives you a firm resistance, then you may be certain that the root system is well developed. When you remove the cuttings, be careful not to disturb the root system. Allow the medium to cling to the roots. This will protect the tender young roots.

Transplant the rooted cuttings in a small plastic pots using a soil mix which has some fertilizer added. There are several excellent soils mixes sold in most garden centers. Allow the rooted cuttings to remain in the soil mix for about three to four weeks. Then transplant into the next size pot or container. Use your regular begonia potting soil.

The **begonia potting soil** we have had success with is as follows:

- 2 parts sterile top soil
- 1 part perlite
- 1 part soil mix (a type with fertilizer added)
- 1 part spaghnum moss

We have found that clay pots or moss lined wire containers are the most satisfactory. However some growers find other types very satisfactory.

METHOD FOR THOSE THAT ARE DIFFICULT TO PROPAGATE

Use any type of stem cutting as described in the above methods. For the rooting medium use a mixture of long fiber moss and perlite. Soak the long fiber moss in water until it is thoroughly wet. Cut the moss into small pieces with scissors. Mix this with one fourth part perlite. You can put this mixture directly into a plastic or glass propagation container or you can put this rooting media into small plastic pots and put them into any empty terrarium or fish tank. In either case the container or terrarium must have a clear plastic or glass cover.

You must be very careful when inserting the cuttings in this rooting medium. Make certain the that the cuttings are securely positioned in the medium by tamping down around the cutting.

When these cuttings have developed a good root system, transplant them into small plastic pots using the same mixture of long spaghnum moss and perlite. These plants should then be grown in a contained atmosphere for a period of time even if they are not plants that require terrarium care. They would be fertilized with weak solution after two to three weeks.

Rooting media for difficult propagation:

1 part long fiber moss (sterilized in microwave for 3 minutes)

1 part perlite

Leaf Cuttings

Leaf cuttings are the most popular method of propagation for the rhizomatous and rex begonias. This method can also be used with a few cane-like and shrub like begonias.

MATERIALS NEEDED-

1. **PROPAGATION CONTAINER:** This container should be made of glass or plastic which is clear and colorless. The container should have a cover or be covered with plastic wrap. The height of this container should be at least 5” high. Choose the length and width according to the number of leaves that you want to propagate. It is advisable to make drainage holes at the bottom of the container. These may be made by using a very hot sharp pointed instrument such as an ice pick. Similar holes in the cover are advisable to prevent excessive moisture on the container.

2. **ROOTING MEDIUM:** This should be placed in the propagation container at a depth of approximately 1 1/2” deep. The medium should be thoroughly wet and then thoroughly drained so that there is no excessive water.

3. **SCISSORS, SHARP KNIFE OR RAZOR:** These should be absolutely clean.

4. **LEAVES:** The leaves used for propagation should be mature and very healthy. They should have no imperfections.

5. **PLASTIC LABEL:** On these labels you should indicate the variety, the date and from whom you received the leaf, if it is not from your plant.

ROOTING MEDIUM - There are many excellent rooting mixes. The mix used should have good drainage and aeration qualities. If you have one that you have had good success with, continue to use it.

The **rooting medium** we have found the most successful for us is as follows:

1 part perlite

1 part vermiculite

These two ingredients should be well mixed before using. They need not be sterilized.

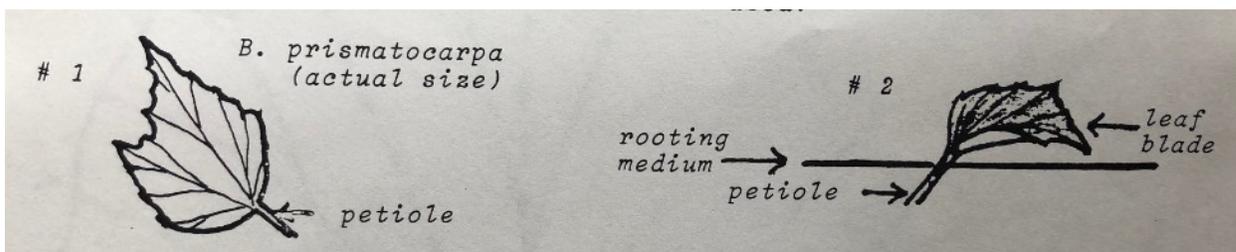
TYPES OF METHODS USED

1. Whole leaves
2. Wedge leaf cuttings
3. Cone leaf cuttings

Whole Leaf Method

This method should be used for all sizes of leaves. However it is very impractical to use this method for leaves which measure over 3" because it requires too much space. This method should be used for all the very small leaved begonias such as: B. 'Bow Joe', B. *bowerae* var. *nigramarga*, B. 'China Doll', B. *prismatocarpa*, B. 'Peridot'.

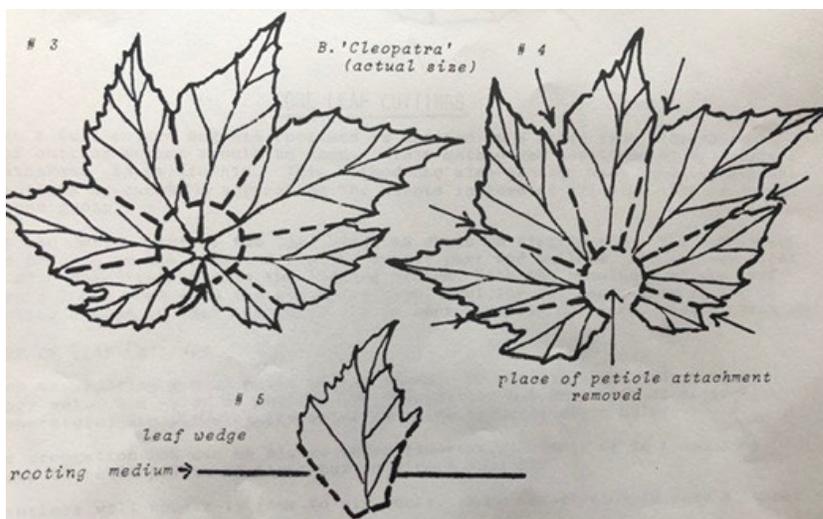
The small leaves should be cut with a small portion of the petiole (leaf stem) attached to the leaf. The petiole is inserted in the rooting medium being careful to have the leaf above the rooting medium. This will help prevent rot on these smaller leaves. See the diagrams #1 and #2. It is easier to care for the smaller leaves when using this method because they are not so susceptible to rot when the whole leaf is used.



Wedge Leaf Cuttings

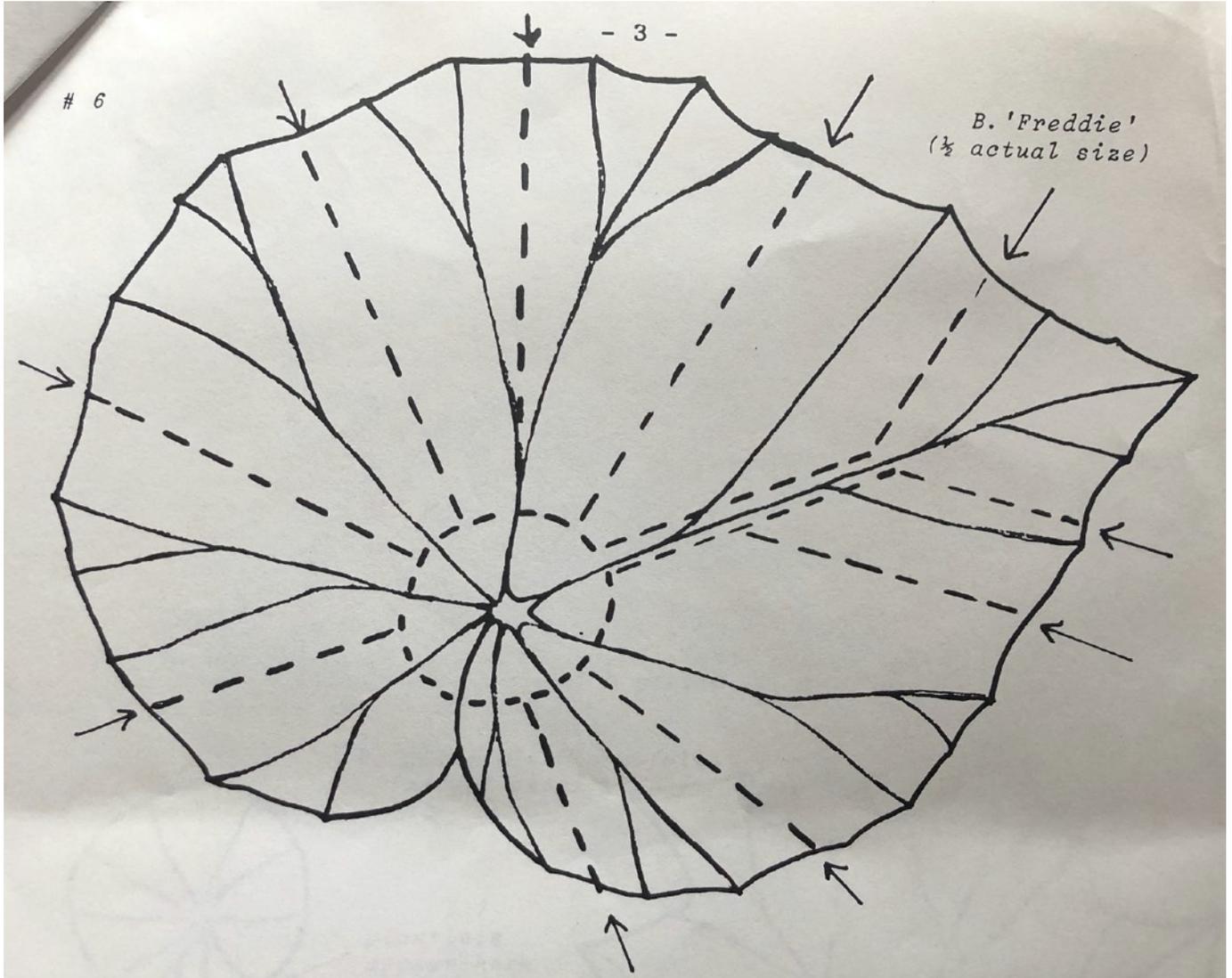
This is the method used for medium, large and giant leaved begonias. It is the method used when many cuttings are desired at one time of the same variety.

Cut the leaf from the plant and then remove the petiole (leaf stem). First cut the center out in a circular fashion as shown in diagram #3. Then you will cut the wedges from the remaining part of the leaf as shown in diagram #4. The dotted lines indicate where you should cut to make these wedges. Put the wedges in the rooting medium at a depth of about one



fourth or one third the length of the wedge. See diagram #5.

When you become more advanced with this method, you might try a little more difficult way of cutting the leaves into wedges. See diagram #6. By doing this you will get more plants from one leaf. There are no other advantages to this method.

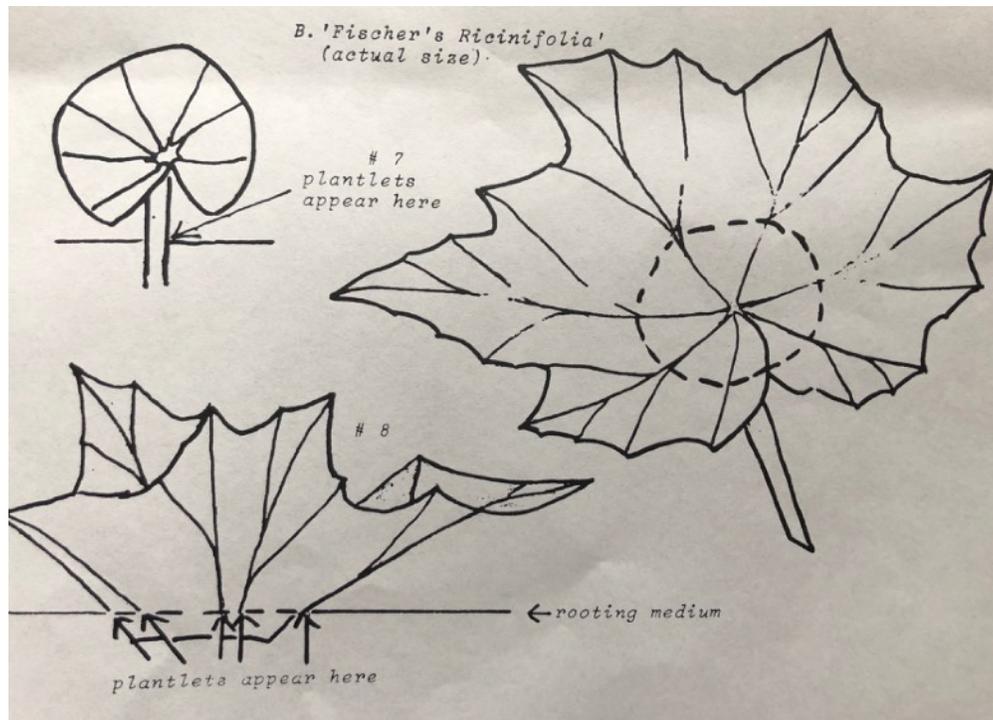


Cone Leaf Cuttings

When a full potted begonia specimen is desired in a short time, the cone leaf cutting method should be used. This method was developed by Sylvia Leatherman in California. This

method can also produce many small individual plantlets by carefully separating the plants instead of allowing them to remain as one group.

Cut the center part of the leaf blade as shown in diagram #7. You may leave the petiole on the leaf and use the center part and petiole for another plant by also inserting this in the rooting medium so that the edges are in approximately one inch. See diagram #8.



CARE OF LEAF CUTTINGS

Keep the rooting medium moist at all times. Do not allow the medium to be soggy wet. You water by putting the propagation box in a tray of water (room temperature) and allowing the water to enter through the drain holds.

The propagation box can be placed under fluorescent lights or in a location where there is plenty of light but no direct sunlight.

Plantlets will appear in four to six weeks. Some varieties will take a longer period of time. At this time you should transplant the little plants into soil mix for about three to four weeks. When transplanting be careful not to disturb the root system. It is not good to remove the rooting mix that clings to the root system. At the next transplanting use a good begonia potting mix.

We have had good success with the following **begonia mix**:

2 parts sterile top soil

1 part perlite

1 part soiless mix (a type with fertilizer added)

1 part spaghnum moss

METHOD FOR THOSE THAT ARE DIFFICULT TO PROPAGATE

Use any of the types of methods listed with the exception of the rooting media. For those begonias which are very difficult to propagate, use the long fiber moss and perlite. Soak the long fiber moss in water until it is thoroughly wet. Cut the moss into small pieces with scissors. Mix this with one fourth part of perlite. Put this mixture in the propagation box and insert the leaves as you would in any of the listed methods.

In most cases the small plants will form in a shorter period of time when with the regular rooting mix. When these are transplanted, use the moss and perlite mixture and put in plastic pots. These plants should then be placed in a contained atmosphere for a period of time even if they are not plants that require terrarium care.

Rooting media for difficult propagation:

1 part long fiber moss (sterilized in microwave for 3 minutes)

1 part perlite