

Cooperative Extension Service
University of Hawaii
Circular 469



DONALD P. WATSON
RICHARD A. CRILEY

BOUGAINVILLEAS

THE AUTHORS

Donald P. Watson* is Specialist in Horticulture and Professor of Horticulture, and Richard A. Criley is Associate Professor of Horticulture, both with the College of Tropical Agriculture, University of Hawaii.

*Donald P. Watson, Specialist in Horticulture (retired).

BOUGAINVILLEAS

Donald P. Watson and Richard A. Criley

Bougainvillea (pukanawila), a woody vine that originated in South America, is widely grown in most tropical and subtropical regions. When allowed to mature naturally, plants may grow to 20 feet or more in diameter. They wind over rocks, hedges, tree trunks, and any natural or artificial structure.

With judicious training and pruning, *bougainvillea* may be used as a shrub, hedge, small tree with a single trunk, or an attractive specimen in a container.

Both day length and temperature influence flowering. When the period of daylight is shorter than the period of darkness, flowering is hastened as long as the temperature is favorable. Day temperatures of 85 F and night temperatures below 70 F hasten flowering. Therefore, in regions such as southern California where the nights are cool and there is a distinct difference in day length, flowering is more seasonal than in Hawaii.

Since there is not a great variation in day length or temperature in Hawaii, flowering is more or less constant, with a flush of new growth and heavy flowering after severe pruning. Best growth and flowering occur in full sunlight.

FLOWER

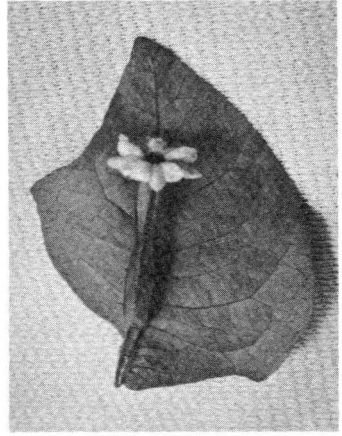
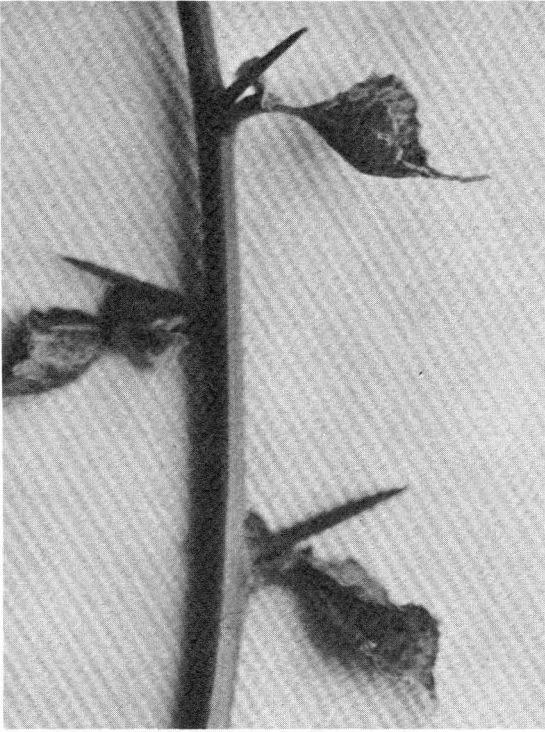
The colorful part, a modified colored leaf called a bract, may be purple, crimson, gold or one of the pastel colors. The vein that runs from the base to the tip of this bract is the attachment for the tubular flower.

Each perfect flower has a frilly fringe of little petals at the top, and stamens and pistil surrounded by a long tube.

Thorns on the stem underlie inflorescences as part of the flower structure. Plant breeding to reduce the number of thorns usually also reduces the number of flowers, as thorns develop when conditions are unfavorable to flowering.

DIFFERENT KINDS

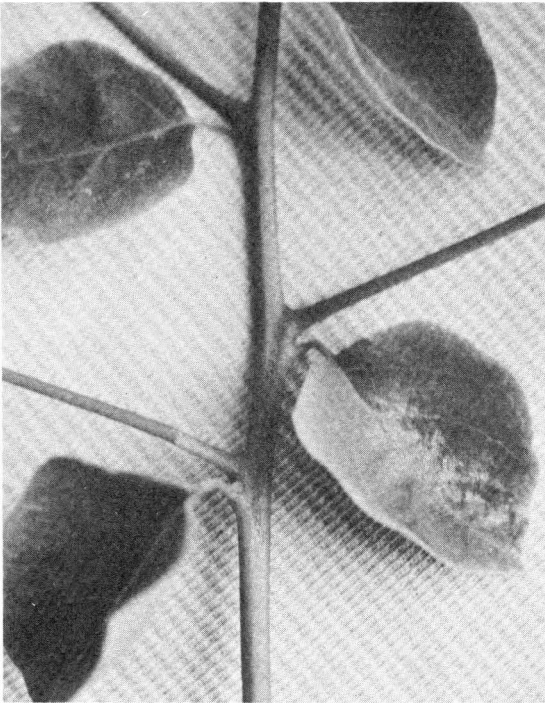
Bougainvillea spectabilis, thorny with relatively small, profuse, reddish-purple flower bracts, has been grown locally for 100 years. It tends to form a large shrub if not pruned. Some of the pink, lavender, and yellow forms are variations of this species. *Bougainvillea glabra* is a less thorny species with large magenta bracts. *Bougainvillea peruviana* is a treelike species with lavender to purple bracts.

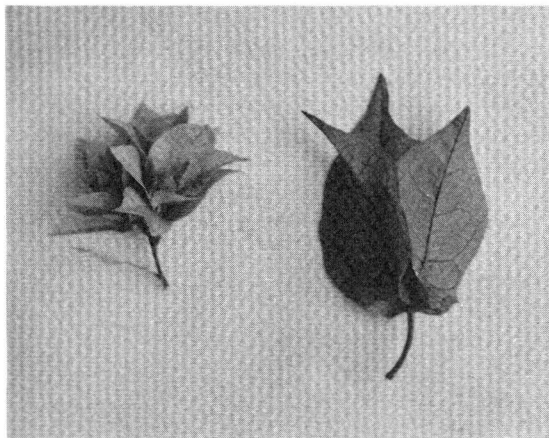


Upper right: Flower and bracts.

Upper left: Spines but no flowers at each node.

Lower left: Flower stalks at each node.





Left: Double (multiple flower) bract.
Right: Single flower bract.

Since there is undoubtedly considerable crossbreeding among these and other species, several intermediate types are now available commercially as named cultivars that have been imported from the Philippines, Kenya, and other tropical or semitropical regions.

Although there is some confusion in the naming of bougainvilleas, the following lists are arranged according to color to aid in identification of some species and a large number of cultivars.

Red

- 'Barbara Karst': brilliant cerise bracts, vigorous grower.
- 'Closeburn': good inflorescence structure, light brick-red bracts, young stems fuzzy.
- 'Crimson Lake': large brilliant crimson bracts.
- 'Kille Campbell': vigorous, large red bracts.
- 'Lacquer Red': vigorous red bracts (a good strong red, no purplish tinge), orange flowers.
- 'Red Glory': strong grower, good foliage, red bracts, medium sized.
- 'San Diego Red': bright red bracts, flowers sparse.
- 'Temple Fire': low growing, sparse red bracts, used as ground cover.
- 'William Paulton': low grower, twiggy, small red bracts.

Purple, mauve blends

- B. glabra* 'Indica': large purple bracts, large leaves.
- B. glabra cypheri*: similar to 'Indica' but a smaller plant with smaller leaves and bracts.
- B. glabra magnifica*: very large magenta-purple bracts, with good arrangement of inflorescences on branch (long peduncles), foliage dark, glossy green.
- B. spectabilis*: vigorous, small leaves, small purple bracts.
- 'Convent': low grower, leaves linear and small, purplish bracts.
- 'Dulci Dayborn': similar to *B. glabra*, no flowers in shade.
- *'Elizabeth Angus': large purple bracts.
- 'Hugh Evans': pinkish mauve bracts.
- *'John Latin': vigorous, mauve to pink bracts, old bracts do not abscise.
- 'Lilac Queen': vigorous, low grower, heavy flowerer, pink-lilac bracts.

Pink, rose blends

- *'Bridal Bouquet': vigorous, double (multiple bracts), pale green and pale pink.
- B. paultonii*: moderate grower, large bracts open orange and turn pink.
- *'Carmencita': double (multiple bracts), magenta rose (patented).
- 'Indian Flame': vigorous, large leaves, heavy flowerer, large bracts open orange and turn dark pink.
- 'Lemner's Special': moderate vigor, soft leaves, large faded-rose bracts.
- 'Lyamunga No. 2': shrubby, low grower, magenta bracts.
- 'Muriel Fitzpatrick': upright, large pink bracts.
- 'Mary Palmer': vigorous when established, large bracts, both white and pink in same inflorescence (patented as 'Surprise').
- *'Miss Manila': vigorous, large bracts open orange and turn rose.
- *'Pink Champagne': double (multiple bracts), rich pink.
- 'Rhodomine': vigorous, large leaves, bright magenta bracts.
- 'Rose Pink': small plant, bracts open orange and turn pink.

Gold, orange blends

- *'California Gold': rank grower, rich golden bracts.
- *'Doubloon': vigorous, double (multiple bracts), orange-gold.
- 'Lady Mary Baring': vigorous, heavy flowerer, small golden-orange bracts.
- *'Miss Manila': vigorous, large bracts open orange and turn rose.
- 'Orange King': flowers in shade.
- 'Rosa Catalina': moderate in flowering habit, large orangish bracts, young stems fuzzy like *B. spectabilis* types.
- 'Rose Pink': small plant, bracts open orange and turn pink.
- 'Yellow Glory': vigorous.

White

- 'Jamaica White' ('Snow-white'): extremely vigorous, medium-sized white bracts, often with pink tinge (patented).

*Dead bracts remain on plant, making it unsightly.

Some other cultivars:

- | | |
|----------------------|---------------------|
| 'Afterglow' | 'Jane Snook' |
| 'Betty Hendry' | 'Jubilee' |
| 'Bois de Rose' | 'Lady Hudson' |
| 'Buttiana' | 'Lateritia' |
| 'Dream' | 'Mrs. Butt' |
| 'Easter Parade' | 'Mrs. Helen McLean' |
| 'Fascelles Purple' | 'New River' |
| 'Gillian Greensmith' | 'Orange King' |
| 'India' | 'President' |
| 'Golden Glow' | 'Purple Prince' |
| 'Gopal' | 'Scarlet O'Hara' |
| 'Hugh Evans' | |

STARTING NEW PLANTS

It is usually advisable for homeowners to buy plants from professional nurserymen who select superior cuttings and root them in specially prepared media with automatically controlled humidity.

To propagate plants at home, select stems that are brittle but still green and about the diameter of a lead pencil. Cut the stems into 6-inch pieces and remove all but the upper two leaves. Dust the base of each cutting in a rooting powder (indolebutyric acid .05 percent, or naphthaleneacetic acid .05 percent) and insert it into a rooting medium of pure vermiculite, perlite, or black sand. Place five or six cuttings in a 6-inch clay flowerpot and water thoroughly. Completely enclose the pot and cuttings in a plastic bag with a few holes in it. Store the pots in a shaded location. After 6 weeks, examine the cuttings. If roots have formed, the new young plants may be transplanted into individual containers. Handle them carefully because the new roots are quite brittle, and if they are damaged the plant will be set back. Cuttings that have not rooted are not likely to, so they may be discarded.

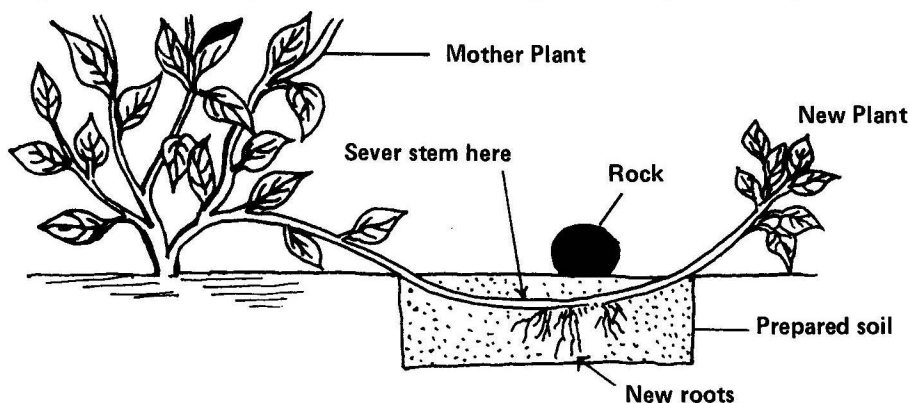
**Rooted
cuttings.**



Stems of bougainvilleas may be rooted while still attached to the plant. At a point about 12 inches from the tip of a lower branch the size of a lead pencil, make a slanting cut 2 inches long on the upper surface. Dust the cut surface with a rooting powder. Remove the leaves from the stem for 6 inches on both sides of the cut. Mix some finely ground hapuu or peat moss and sand into a cubic foot of soil below where the branch is to rest. Cover the leafless section of the stem with 2 inches of the soil mixture and place a stone on the surface to hold the branch in place. Twist the branch half a turn to open the cut, mulch the surface of the soil, and water frequently.

After 6 or 8 weeks, roots should have formed under the covered section of the stem. Sever the new plant from its parent. Let it grow independently for a few weeks before transplanting to its permanent location.

This method of propagation, called simple layering, does not make a plant as well shaped as a rooted cutting but it requires less precision.



GROWING BOUGAINVILLEA IN THE GARDEN

Bougainvilleas grow well in a variety of soils if there is good drainage and at least 25 inches of rainfall per year.

If bougainvilleas are to be allowed to grow naturally, plant them at least 10 feet apart. If they are to be used as a hedge or to cover a wall or other frame, they may be planted 15 feet apart. Low growing 'Temple Fire' may be planted 3 feet apart to grow together as a ground cover.

If you want to grow several kinds in a limited area, growth can be reduced and flowering increased, at least temporarily, by restricting the root growth. To do this, grow the plants in 5-gallon containers, make a short slit in the bottom of the container and sink the container in the ground. Removal of part of the new growth on mature plants will tend to increase flowering.

Most bougainvilleas, especially established vigorous plants, will withstand severe pruning when they outgrow their bounds. Weak plants may not recover from severe pruning. All stems may be cut back to the desired level, or a few stems may be cut back leaving the others to provide food.

To induce new, vigorous growing clones to flower earlier, cut off the growing terminal or bend it back and wire it to a stake. This causes lateral shoots to develop which will bear more flowers than single, parent stems.

Old flower clusters may be trimmed off or the entire end of the flowering stem cut back to below the lowest flower cluster.

As soon as plants become woody, however, flowering can be reduced by overfertilization. In our climate, bougainvilleas tend to flower well for 6 weeks. Then, to limit amount of growth and produce a new crop of flowers, prune severely and fertilize lightly (1 cupful of 5-10-5 per average-sized mature plant).



Bougainvillea makes a riot of color on a hillside.

GROWING BOUGAINVILLEA IN CONTAINERS

Few plants produce more color throughout the year than do bougainvilleas in containers. Because their roots are restricted, they tend to be dwarfed and flower profusely. Selections and hybrids with *B. glabra* in their ancestry (purple or mauve blends) respond well when grown in containers, although all cultivars may be grown in this manner.

When plants are to be used in decorative containers for display purposes on a lanai, a patio, or in some other prominent location, grow them in plastic containers that will fit inside the ornamental container. Then they may be replaced with other flowering plants while they recuperate from heavy pruning after flowering. The flowers will not survive long in the house or in a shady location.

A well-drained soil medium (e.g., equal parts soil, peat, perlite) is essential for maintaining the health of a bougainvillea in a container. A soil medium such as this does not compact, excess fertilizer can be leached out easily, and overwatering will not cause the roots to become waterlogged.

When a young plant is first planted in its container, give it a light application of organic fertilizer (dried blood, bone meal, etc.). After the plant is established, a teaspoonful of 10-10-10 fertilizer per gallon container every 2 months should produce good growth.

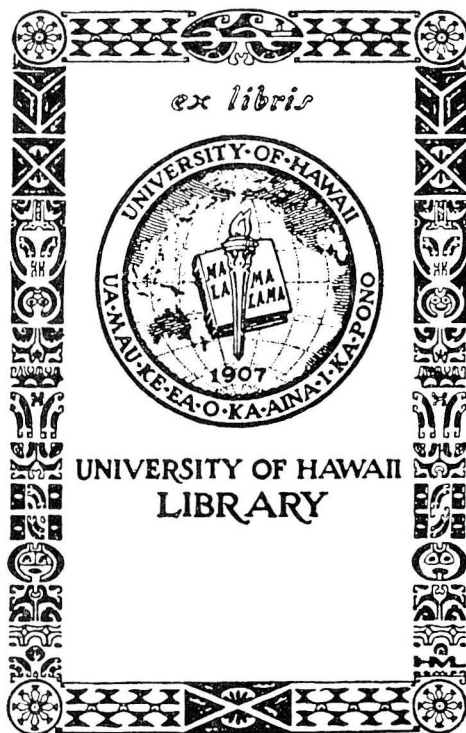
Spraying once a month with liquid fertilizer containing minor elements will usually improve the quality of the leaves and the number and size of flowers.

Container-grown bougainvilleas tend to flower readily when pruned back. After flowering, they should be allowed to make new growth and recover by making and storing food. A bonsai-like plant may be formed by repeated cutting back and by pinching and pruning to shape.

FLOWER FAILURE

Flower failure of plants growing in the soil is most often the result of overfertilization, overwatering, and not enough sunshine. Some of the most prolific plants are those that grow in neglected areas where the roots are restricted and there is plenty of sunlight and low rainfall.

Plants growing in containers, however, must always have enough fertilizer and water so that new growth will not be restricted, yet not so much fertilizer that vegetative growth will be too rapid. To achieve this delicate balance may require considerable patience and experience.



Hawaii residents may order single copies of publications free of charge from county offices. Quantities of any one publication are sold at cost. Quotations will be furnished on written request to Agricultural Publications and Information Office, College of Tropical Agriculture and Human Resources, 2500 Dole Street, Krauss Hall Room 107, Honolulu, Hawaii 96822. Price per copy to bulk users, fifteen cents per copy.

Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, in cooperation with the U. S. Department of Agriculture, and Dean and Director William R. Furtick, and Acting Associate Director Margaret E. Fitch, Cooperative Extension Service, College of Tropical Agriculture & Human Resources, University of Hawaii, Honolulu, Hawaii 96822. An Equal Opportunity Employer providing programs and services to the Citizens of Hawaii without regard to race, color, national origin or sex.

CIRCULAR 469—Reprinted 0479.5M