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**COOPERATIVE EXTENSION WORK IN  
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**ROSE GROWING**

By W. L. FLOYD AND JOHN V. WATKINS



Fig. 1.—The rose—beautiful, fragrant, subtle flower of sentiment, romance and history.

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# ROSE GROWING

By W. L. FLOYD AND JOHN V. WATKINS\*

## INTRODUCTION

We like roses partly because of the effect on the senses of their form, color, or fragrance, partly because there is something more subtle which draws us to the flowers of this plant, when there are so many others that are beautiful in form, striking in color and delightfully fragrant.

Probably the long history and popularity of the rose in all countries has something to do with our fondness for it. As an emblem of youth it was, in the long ago, dedicated to Aurora. By others, as the emblem of youth and beauty, it was dedicated to Venus. It is the symbolic flower of our mother country, England, where it has held a conspicuous part in legend, song and history for many centuries.

A rose suspended from the ceiling enjoined secrecy regarding what was said and done at ancient banquets, hence the expression still current, "sub rosa."

No other flower has had so much sentiment, romance and historic association connected with it.

Native roses are found growing in all temperate countries of the northern hemisphere. These have made possible the development of varieties adapted to different regions and multiplied the number so that there is large opportunity for selecting favorites and giving some reasons for their selection.

## CLASSIFICATION

Roses are classified, according to origin or the species from which they came, into a number of garden groups. These have been so much mixed that their original characteristics overlap at many points. Some of the most important in Florida are:

**Teas:**—These are more easily injured by cold than any others and because of this are especially adapted to the Gulf Coast region and California. Some of our most robust growers are found among them, though they are considered as weaker than hybrid teas in regions just to the North. The flowers have a wide range in color

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and are characterized by a tea-like fragrance and continuous blooming, except during the coldest winter months.

**Hybrid Teas:**—These are more nearly perpetual bloomers than the group so named; the bushes are vigorous but rather small, so are best planted close together in beds. They comprise practically

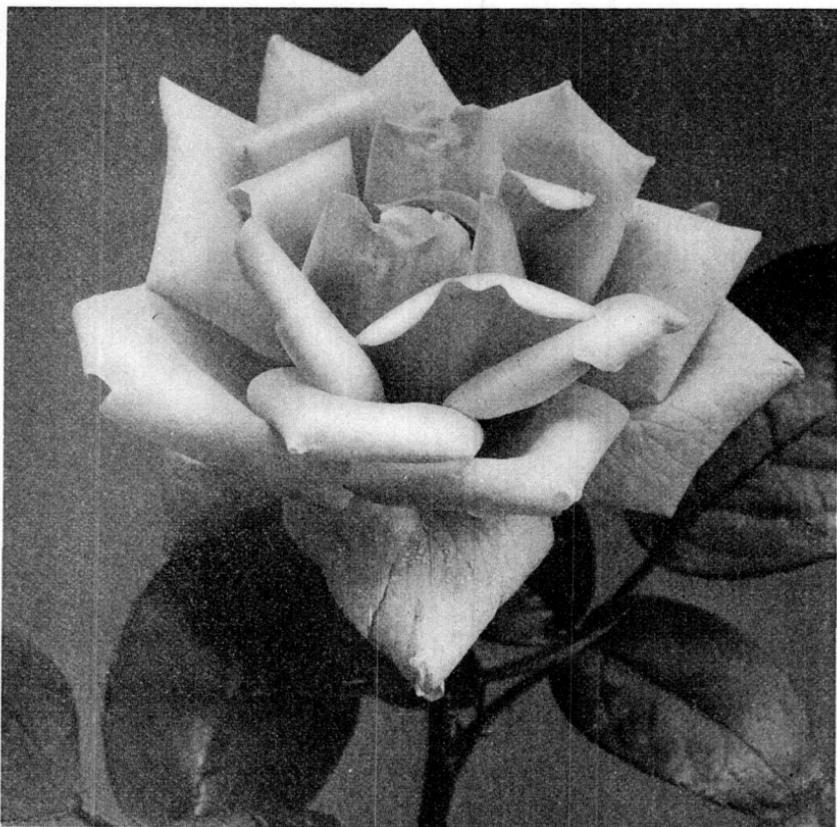


Fig. 2.—Betty is a coppery pink hybrid tea that is attractive.

all colors possible in a rose, many with pointed buds and strongly tea-scented flowers. More hybrid teas than any other type are planted in Florida.

**Hybrid Perpetuals:**—This group includes the largest roses, borne on stiff, upright stems, with rough, deep green foliage. They produce flowers on shoots developed from previous year's wood, while those of teas and hybrid teas are on current season's growth. The flowers are inclined to be flat, and are very full, but lack fragrance.

**Polyanthas:**—These are of dwarf habit, nearly ever-blooming, with shapely bushes and flowers in clusters. They come in various shades of color but lack fragrance. Cecile Brunner and the Baby Rambler are representative varieties. Some others of less importance to us are the Noisettes, Hybrid Wichuraianas and Cherokees.



Fig. 3.—Francis Scott Key, large, deep red, thrifty—one of our favorite dozen.

## OUR FAVORITE DOZEN

Listed below are the favorite dozen roses of the authors. The first six are teas, the best group for Florida:

*Duchess de Brabant*: Pale pink, stems rather short for cutting.

*Madam Lambard*: Darker on outside of petals than on the inside, stems rather short. The most vigorous pink we have.

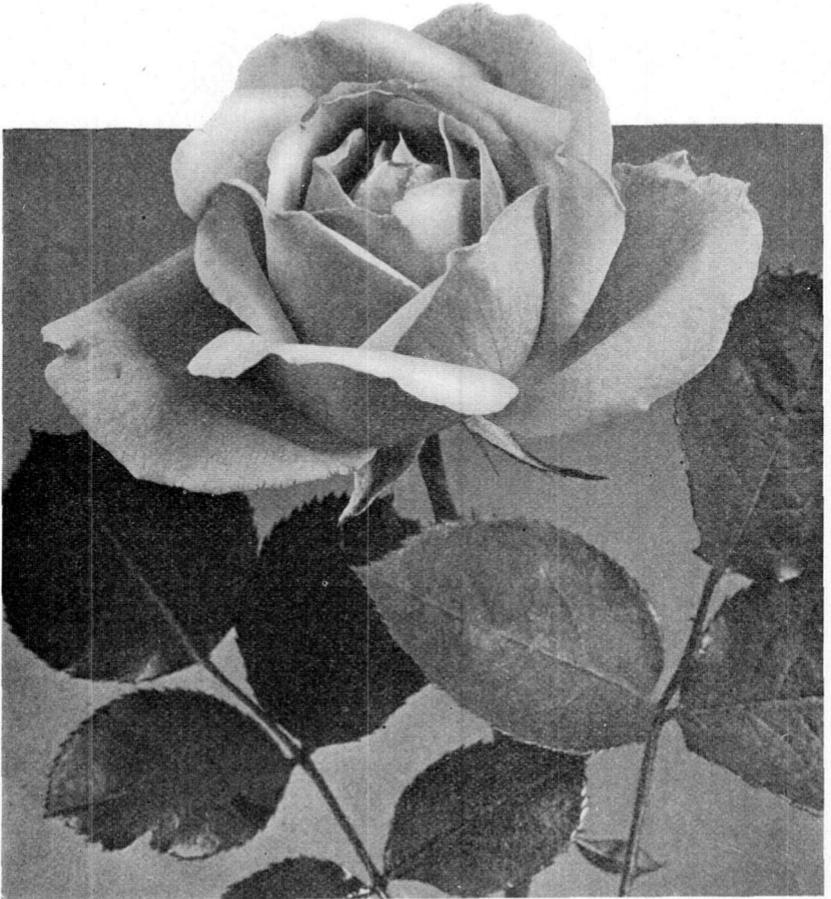


Fig. 4.—The Radiance is the easiest grown and most reliable pink hybrid tea. One of our favorite dozen.

*Safrano*: Salmon colored buds of exquisite shape, semi-double flowers.

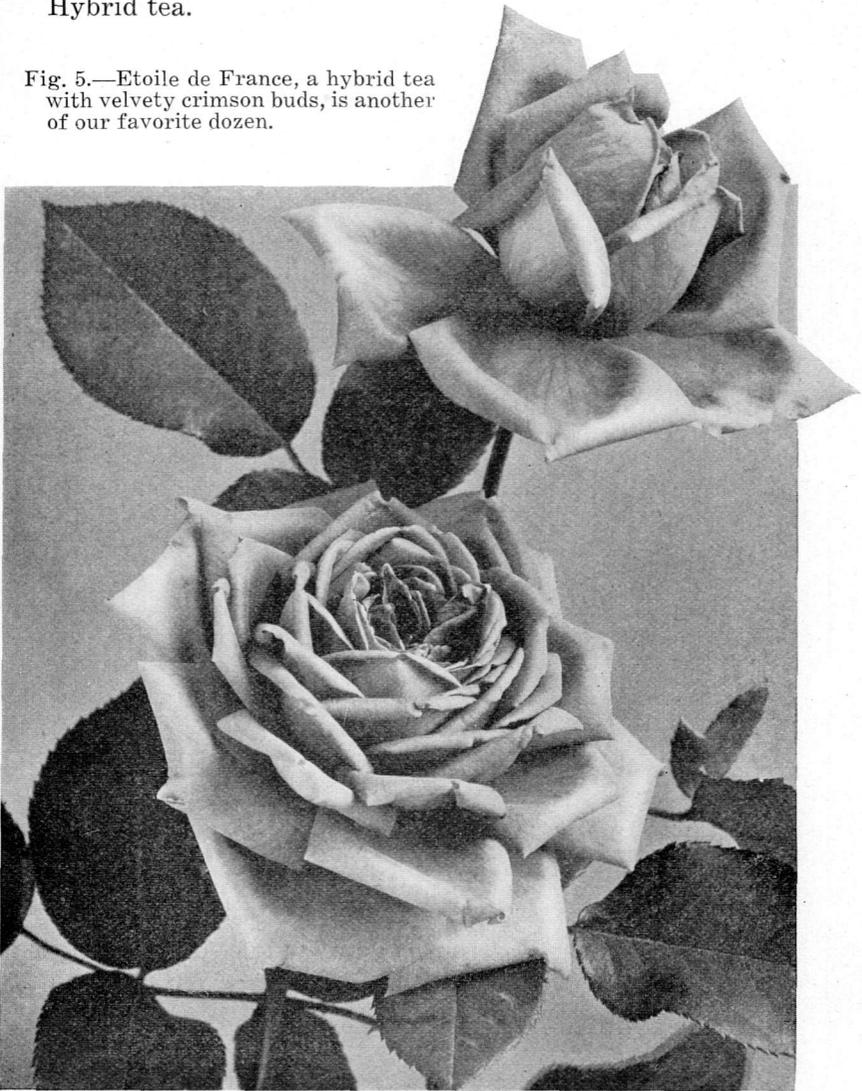
*Maman Cochet*: Rosy pink, double flower of fine form and substance. The white is also good as a bush and climber.

*Marie Van Houtte*: Light yellow, edged with rose; very strong grower.

*Lady Hillingdon*: Slender, pointed buds and flowers of saffron yellow. The climber of this is more vigorous than the bush form.

*Antoine Rivoire*: Creamy-white delicately tinted with pink. Hybrid tea.

Fig. 5.—*Etoile de France*, a hybrid tea with velvety crimson buds, is another of our favorite dozen.



*Radiance*: The easiest grown and most reliable pink hybrid tea.

The Red Radiance is equally desirable.

*Etoile de France*: A hybrid tea with velvety crimson buds and flowers borne on strong, stiff stems.

*Kaiserin Auguste Viktoria*: A standard old hybrid tea. Flowers are snowy white, with a tint of lemon in the center. The climber of this is also desirable.

*Francis Scott Key*: Large, deep red, lasts well when cut, thrifty growing hybrid tea.

*Frau Karl Druschki*: Often called White American Beauty. A hybrid perpetual, with large, full, snow white blooms.

Fig. 6.—Paul's Scarlet Climber blooms profusely in the spring.



*Louis Philippe*: A Bengal rose, often called Florida rose. A wealth of dark red blooms are produced continually. It is one of the few that grow satisfactorily from cuttings.

In this selection we have not given long stems, so much desired in cutting roses, much consideration; rather beauty in the garden and in vases and baskets in the house. All important colors are represented.

### Desirable Climbers

*Reine Marie Henriette*: Tea, fine growing plant, producing large cherry-red flowers.

*Reve d'Or*: A vigorous climbing Noisette; flowers creamy yellow.

*Paul's Scarlet*: Hybrid Wichuraiana, vivid scarlet, shaded crimson, blooms profusely in spring.

*Dr. Van Fleet*: Hybrid Wichuraiana, rank climber, flowers flesh-pink, deepening to rose in center.

Preference has been given to those which are vigorous, long-lived, ever-blooming and resistant to diseases. Authorities on rose culture in Florida have been consulted and the performance of varieties growing in our college gardens has been closely observed.

### OTHER GOOD VARIETIES

The following are some other varieties which we have found to do fairly well in Gainesville.

#### Teas

Alexander Hill Gray—yellow, not very prolific, difficult to find perfect flowers.

Bridesmaid—pink.

Devoniensis—white, shaded pink. Climber.

Helen Goode—creamy white.

Minnie Francis—dark pink.

Natalie Bottoner—cream yellow.

Perle des Jardins—creamy yellow.

#### Hybrid Teas

Betty—coppery pink.

Dean Hole—splashed silver carmine.

Duchess of Wellington—saffron.

Etoile de Hollande—red.

Jonkeer J. L. Mock—pink.

Joseph Hill—yellow, pink edges.

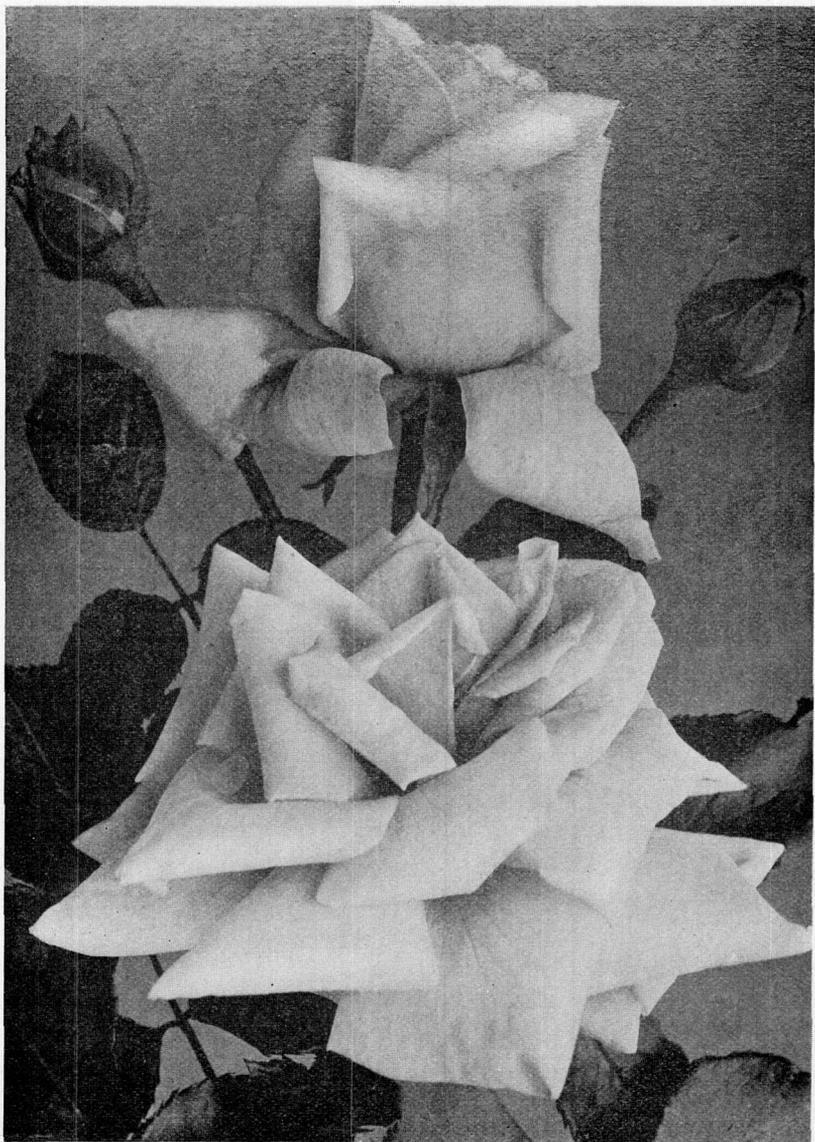


Fig. 7.—Joseph Hill, a yellow hybrid tea with pink edges, makes an attractive rose.

Gruss an Teplitz—crimson.  
Killarney—pink.  
Luxembourg—yellow.  
Mrs. Aaron Ward—Indian yellow.  
Rose Marie—rose pink.

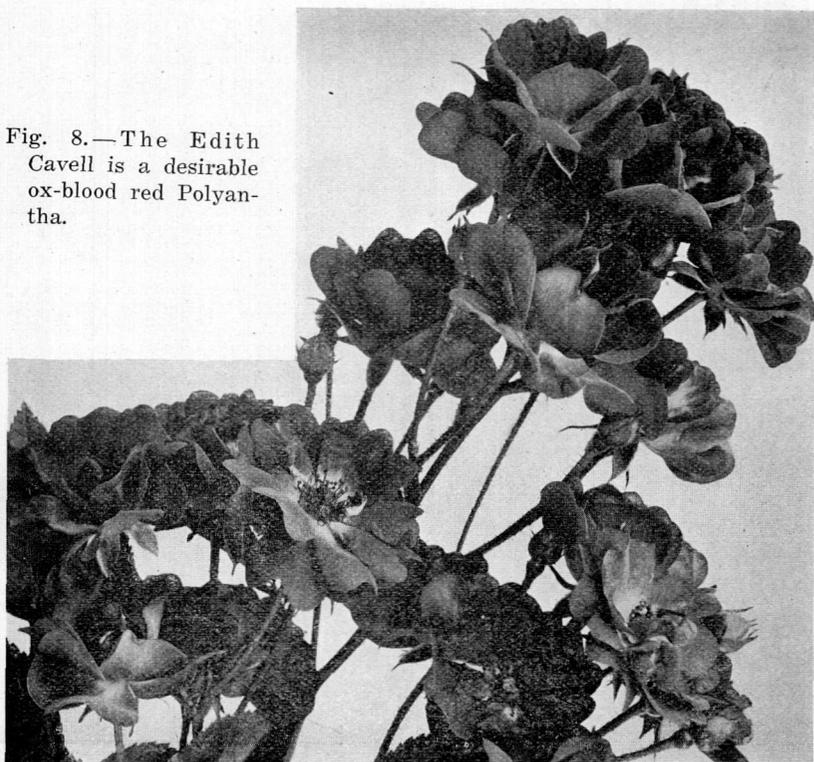
#### Hybrid Perpetuals

Anna de Diesbach—pink.  
Paul Neyron—rose pink.  
Pink Frau Karl Druschki—pink.  
Crimson Frau Karl Druschki—crimson.

#### Polyanthas

Baby Doll—shades of pink, saffron and crimson blended.  
Baby Rambler—red.  
Cecile Brunner—shell pink.  
Edith Cavell—ox-blood red.

Fig. 8.—The Edith Cavell is a desirable ox-blood red Polyantha.



**Noisette**

Marechal Niel—yellow climber.

Lamarque—yellow climber.

Chromatella—lemon yellow climber.

Estelle Pradel—white climber.

**Hybrid Wichuraiana**

Silver Moon—white climber.

American Pillar—pink climber.

Dorothy Perkins—pink climber.



Fig. 9.—The Silver Moon, a hybrid Wichuraiana, is a desirable white climber. The one shown here was used in a hedge.

**Cherokee**

Anemone—pink climber.

Fortune's Yellow—blend of yellow, orange and pink climber.

White Cherokee—white climber.

Ramona—red climber.

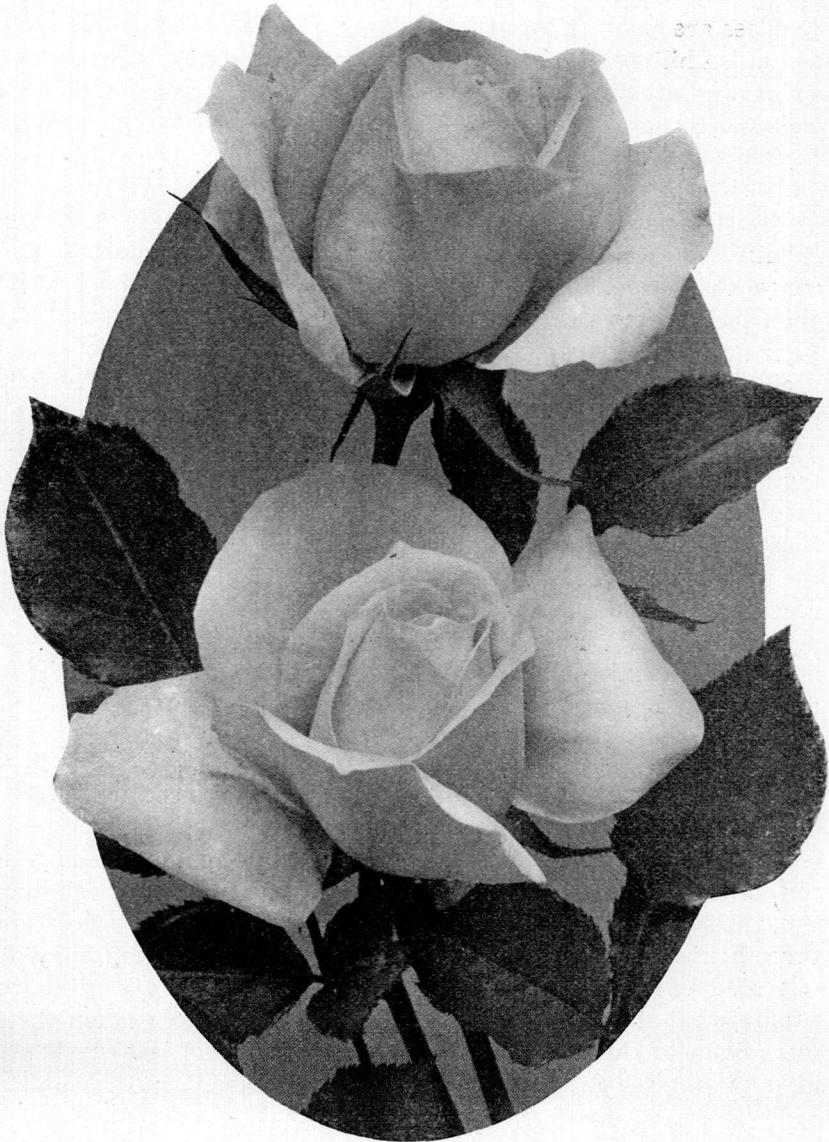


Fig. 10.—Antoine Rivoire, a hybrid tea with creamy white blooms delicately tinted with pink, is another of our favorite dozen.

## PROPAGATION

Roses are easily grown from cuttings, and a few varieties, such as Louis Philippe, Banksia, Cherokee and McCartney, do well when so grown; other vigorous kinds do fairly well from cuttings on clay-loam or low hammock soils, but the weaker growers are satisfactory only when grafted or budded on a vigorous growing stock, and this is especially true for those grown on more sandy soils.

Many stocks have been tried and compared, among them Madam Plantier, Rosa multiflora, Canina, Fortuneana and odorata; the consensus of opinion today is that Rosa odorata is the most desirable stock for most Florida localities and conditions. These plants sucker very little, are more drought resistant, more vigorous, and produce more flowers on light porous soils. They seem to be very resistant to the attacks of nematodes, which produce root-knot.

Rosa odorata is ordinarily a long-lived plant, even under the trying conditions of Florida, and can be relied upon to furnish an excellent understock for our popular cutting varieties. Very often these improved varieties are not adapted to outdoor culture and the rosarian will be disappointed to find that many of the varieties receiving glowing reports in the nursery catalogs will last only a year or two. The Florida rose garden requires continual replacement, in spite of the most careful cultural methods, so that it is necessary to buy new plants each season.

## LOCATION

One usually cannot locate the rose garden where the soil is best, but where there is a suitable area near the house. It should not be placed under the shade of large trees, whose roots will compete for moisture and plant food, and whose leaves and branches intercept the sun's rays. Trees far enough away to allow not less than three hours of sunlight a day, preferably in the morning, may be tolerated provided plenty of plant food and water are given to supply what the roses need after the tree roots have taken their toll. Some of the weaker growing teas and hybrid teas are benefited by mid-day and afternoon shade in summer.

## SOIL PREPARATION

Roses are shallow rooted, therefore deep preparation is not necessary; well-rotted cow manure, or compost, scattered over the ground at the rate of a wheelbarrow load to 25 square feet and turned in to a depth of 8 to 10 inches ten days or two weeks before planting is a good preliminary preparation.

## PLANTING

The best planting time is when plants are most dormant; this is usually in December and January, but may vary a month in either direction. The plant should be carefully pruned, all broken and bruised roots being cut off clean and smooth.

Although roses require an abundance of water, they cannot stand wet feet, so a well-drained situation should be chosen.

In laying out the rose garden, narrow beds, preferably not over five feet in width, are recommended so that the weeding, pruning

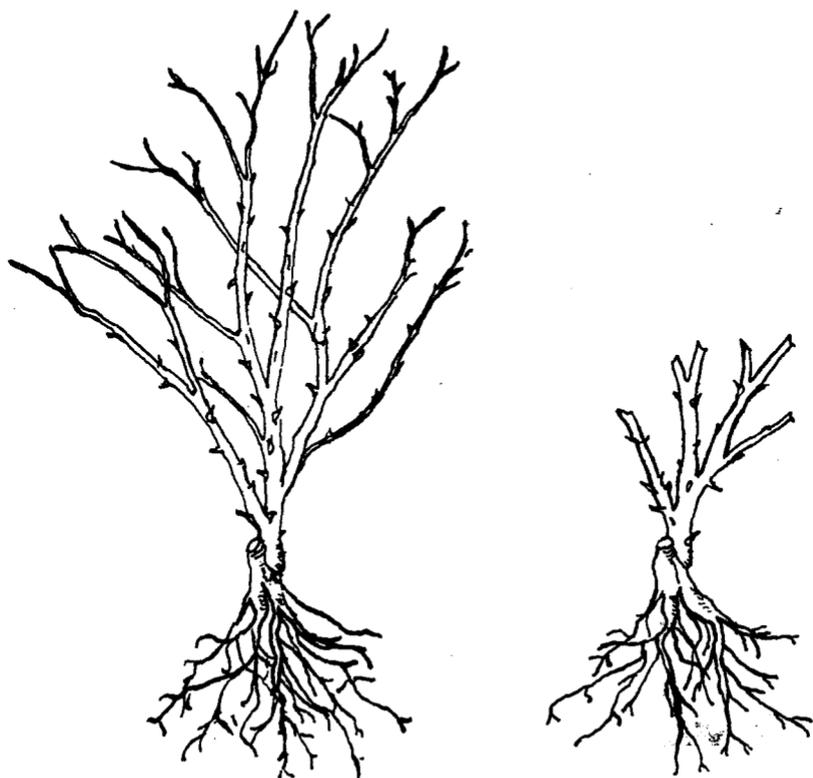


Fig. 11.—Rose plant at time of setting. Unpruned on left, pruned on right.

and gathering of the flowers can be accomplished from walks on both sides. Tender new growth is easily broken off by gardeners if they are required to walk between the plants when working.

If the soil is poor, remove it to a depth of two feet, and replace it with a compost of rotted leaves, cow manure or good hammock soil. The older the compost the better.

For climbers and pillar roses, three feet is a satisfactory planting distance. Hybrid perpetuals and strong growing hybrid teas should also be planted three feet apart, while the less robust hybrid teas, teas and polyanthas succeed well in the checks of two to two and a half feet.



Fig. 12.—The Duchess of Wellington is a saffron hybrid tea that produces attractive blooms.

It is considered good practice to arrange the rose garden with trellises for climbing roses as a boundary to protect the more delicate bush varieties from the winds.

The holes for the plants should be sufficiently large to accommodate the root systems without crowding. In the bottom of each hole drop two handfuls of bone meal and cover lightly with good

top soil. Insert the new plant so that it will grow at the same depth as it grew in the nursery row. With plenty of water, work the top soil about the roots, filling the hole to the ground level. Pack firmly by trampling with the feet, and put a large saucer of earth about the plant to hold water.

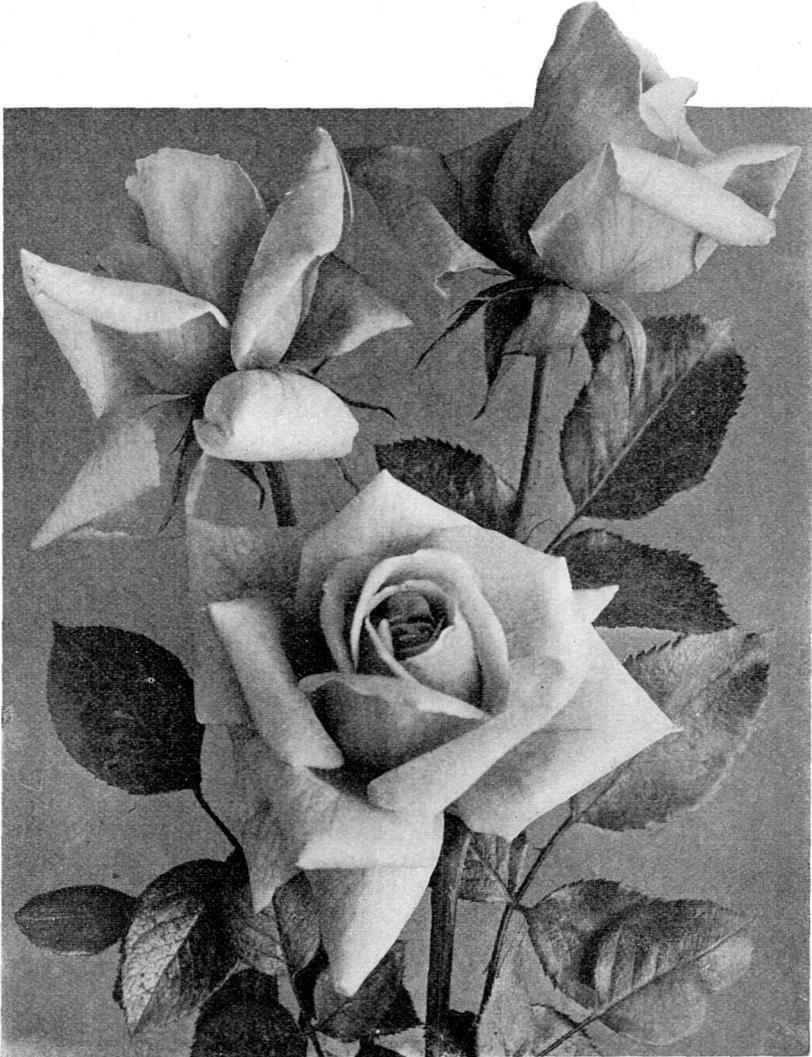


Fig. 13.—Mrs. Aaron Ward, a hybrid tea with Indian yellow blooms.

## CULTIVATION

We believe that the mulch system is preferable to cultivation, especially where plants are set close together. Cultivation, unless shallow, destroys many feeding roots and causes the organic matter in the soil to burn more rapidly. Moreover, there is danger of breaking the new tender growth unless the tools are handled with extreme care. Rose flowers are borne mainly on new wood, so it is quite evident that breaking off the new shoots will materially reduce the number of flowers.

If the rose garden has been laid out in beds the weeding, fertilizing, pruning, and the cutting of the flowers may be done by hand from the walks on both sides of the beds.

Cow manure applied two or three inches thick over the entire rose bed is probably the best mulch. This material supplies plant food, beneficial bacteria, organic matter, and serves as a blanket to protect the roots from the hot sun. Early each spring the old mulch should be worked into the soil and a new mulch should be applied. If cow manure is objectionable or cannot be obtained, cottonseed meal or tankage, at the rate of three-quarters to one pound may be scattered about each plant and raked in lightly; then the soil should be mulched with peat moss or leaves of forest trees.

When flower buds appear one-half to three-fourths of a pound of a garden fertilizer analyzing 4% ammonia, 6% phosphoric acid and 5% potash, applied about the plant by raking the mulching material aside, scattering the fertilizer over the ground, then raking the mulch back so as to cover it, will increase the size and quantity of blooms. This may be repeated in September or early October if plants are not in vigorous condition.

Granulated peat moss is an excellent mulch material. It has remarkable water-holding capacity, adds organic matter to the soil, and protects the roots from the hot sun. In addition to its other advantages, peat moss is quite free of weed seeds.

Oak leaves, straw and lawn clippings are also valuable mulch materials, but are inferior to peat moss.

## PRUNING

In addition to cutting back at time of planting, the plants should be carefully pruned each season. Pruning shears are best for this work. Bush varieties are best pruned when most dormant, usually in December to February. First remove, close to the ground, all

dead and weak shoots, then cut back the strong stems, removing one-fourth to one-third of the old wood. Prune sufficiently to give the bushes a symmetrical shape.

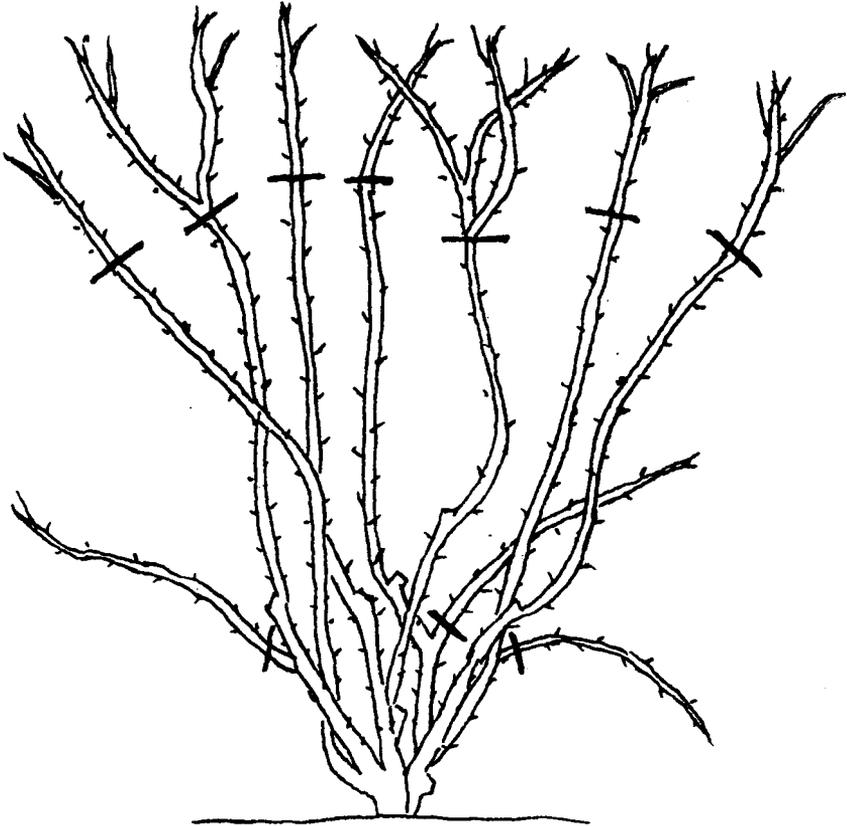


Fig. 14.—Hybrid tea rose, showing where to prune after one year's growth.

Climbers should be pruned less than bush forms, but all dead and weak wood and crossed branches should be removed as soon as found. These should be looked for after the heavy blooming of spring.

The art of pruning is gained by experience; different groups and varieties require different treatments, and should be studied to determine what is best suited to each.

### HANDLING BLOOMS

Early morning, while the dew is still on the leaves, is the best time to cut roses. Select buds with two or more petals open and cut them with as short stems as possible. Cutting roses with long

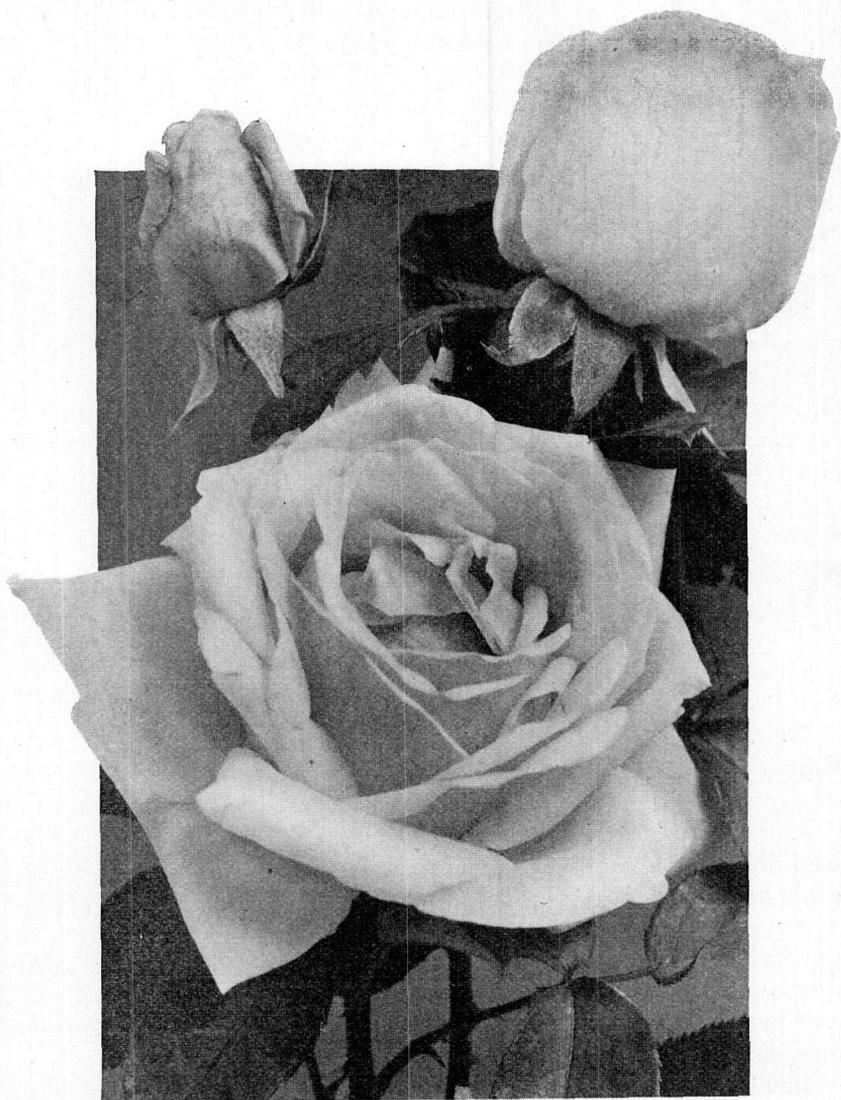


Fig. 15.—Frau Karl Druschki, often called White American Beauty, is another of our favorite dozen.

stems greatly reduces the leaf area and causes a serious check to the plant. Small sharp pruning shears are best for cutting roses. The cut should be made on a slant, just above a bud which points away from the center of the plant. As soon as possible after the buds are gathered place them in cold water in a cool shady place for an hour or two before arranging them. Each day cut a half inch or so off of the end of each stem with a sharp knife, and renew the water in the container.

### LATE SUMMER TREATMENT

The rainy season is attended by a flush of growth which produces a profusion of blooms. After the rainy season very often a long drought condition is experienced. At this time the plants may be allowed to rest in preparation for a season of blooms in the early fall. During this rest period irrigation may be withheld and the plants may be pruned so as to make them shapely and compact. With the advent of cool weather an abundant supply of water and plant food will bring the rose bushes into a flush of growth which is necessary for the production of blooms.

### COMMERCIAL GROWING

Those living near cities or large towns may find a market for well-formed roses of good quality, on long, stiff stems.

The radiances are the most satisfactory as a rule, though Kaiserin Auguste Viktoria and Antoine Rivoire are other varieties of value.

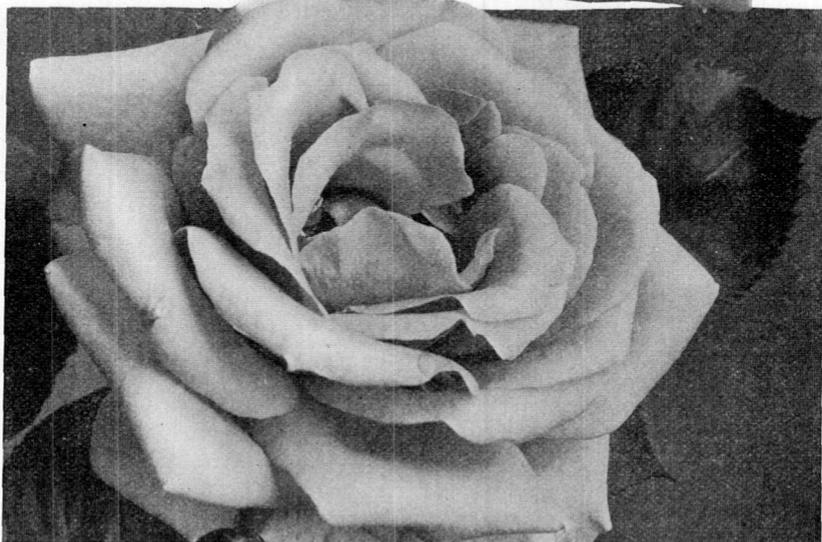
A fertile, well-drained location is important. This should be well manured and prepared before planting. Cow manure in liberal quantities, or, if it is not obtainable, cottonseed meal or tankage, broadcast and plowed or disked in at the rate of one to three tons per acre, at least two weeks before planting, is a good preliminary preparation.

It is best to set the plants in rows three feet apart, spacing them one and a half or two feet in the rows.

Mulching is not practicable for large areas, so abundant fertilizer and a limited amount of shallow cultivation should be given. Cultivation may begin when signs of new growth appear and continue till the beginning of the rainy season, at intervals, only as often as necessary to keep down weeds and grass.

When flowers begin to form, an application of 1,000 to 1,500 pounds of garden fertilizer, already described, may be made and

Fig. 16.—Rose Marie, hybrid tea with attractive rose-pink blooms.



cultivated in lightly, to increase size and quality of the bloom. During the rainy season apply one to two tons of raw bone meal per acre and occasionally chop down all weeds with a hoe. In the hot, dry period following the rainy season, prune lightly, removing all weak wood and cutting back very long stems. Plants usually take a partial rest at this time, which prepares them for vigorous effort a little later.

About the middle or latter part of September fertilize and cultivate as in the spring and irrigate if possible, if rains are infrequent. This will stimulate growth on which November and December blooms will form.

When cold checks the blooming, prune carefully, as discussed elsewhere and allow the plants to rest until swelling buds indicate that growth activity has begun, then begin fertilization and cultivation as done the year before.

Some growers, especially on the lower East Coast, are succeeding with roses on muck lands. As such soil is usually rich in nitro-



Fig. 17.—Gruss an Teplitz, crimson-flowered hybrid tea.

gen this element is reduced in the fertilizer, but the phosphorus and potash are used liberally. No satisfactory fertilizing plan can be given as the chemical and physical condition of these soils is quite variable. Well-balanced fertilization, careful attention to drainage, cultivation and other factors important in upland growing, will insure success.

## INSECTS

**Rose aphids**, or green plant lice, are at times serious pests in the rose garden. They gather in great numbers on the tender new growth and about the young buds. Stunted growth and imperfect blooms are the result if the insects are allowed to go unchecked. Nicotine and soap sprays or nicotine dust are efficient controls.

**Flower thrips** are extremely troublesome during dry seasons. They are tiny, light colored insects that infest the blooms in numbers beyond estimation. Browened petals, balled buds that fail to open and abnormal shapes result from the attacks of thrips. Water seems to be the only effective control. Almost all flowers harbor these insects, so it is useless to try to reduce their numbers.

**Pumpkin bugs** often attack roses, especially during the fall, and punctured buds of abnormal shape result from their feeding in the rose garden. Hand picking, at best a tedious and thankless process, seems to be the only method of control. Spraying apparently has little or no effect, as the insects fly when they are approached.

**Cottony cushion scale**, when found feeding on the stems or canes, are best controlled by colonies of *vedalia*, a small beetle which is a natural parasite. A citronella spray, if applied under very high pressure, will give an effective check.

## DISEASES

**Black spot** is the most serious disease with which the rosarian has to contend. It is first evident in the form of minute irregular black spots on the upper surface of the leaves. As the fungus grows, the spots become larger, until finally the leaves turn yellow and drop off. This reduction of the leaf area is a serious check, and stunted bushes, bearing a few small blooms, are the result. Lesions running along the stems are also a manifestation of the disease.

Black spot is especially prevalent during hot, humid weather, and at this time special precautions should be taken to protect the

rose garden from the ravages of this disease. So far as known there are no cures for black spot, so preventive measures are the only means of control.

Copper compounds, such as Bordeaux mixture or ammoniacal copper carbonate, a colorless spray, are efficacious treatments if frequent applications are made. The disease spreads so rapidly that a coating of copper should cover the plants at all times to forestall the entrance of the fungus into the tissues of the leaves and stems. Plants in vigorous growth seem to be less severely injured than are the weaker individuals. Abundant plant food and water should help the plants to overcome the ravages of the disease.

Some varieties are much more resistant to black spot than others. Generally the climbers are less seriously infected than are the bush sorts.

Black spot has proven to be so serious in rose culture that a great deal of research has been done in recent years to find satisfactory controls for the disease. As a result of this work many different kinds of ready mixed sprays and dusts are offered by seed stores and plantsmen. Some of them require mixing with water before being applied, others may be dusted on the plants just as they come from the carton.

**Mildew**, another fungus disease, is occasionally seen in Florida rose gardens. It is not nearly so injurious as is black spot, and is much easier to control. Frequent dusting with sulphur will easily control mildew.

**Stem canker**, characterized by brown or black areas on the stems or canes, often causes serious reduction of the wood. Infected parts should be cut away and burned.

The catalogs of the larger seed houses contain advertisements of several sorts of small sprayers and dusters. Most of these are quite serviceable and if given good care they may be relied upon to last several years. It is well to bear in mind that the popular compressed air sprayers have no agitators, therefore occasional vigorous shaking of the tank aids in keeping the contents well mixed.

### SUMMARY

1. Plant bush varieties in beds, two to two and a half feet apart each way. Give climbers more distance.
2. Bud or graft them on Texas Wax (*Rosa odorata*) stock.
3. Break the ground deep and fertilize with well-rotted manure and bone meal before planting.

4. Select a location where they will get at least three to four hours of sun each day.
5. Give plenty of water and plant food. Fertilize two or three times during the growing season.
6. Plant no deeper than they stood in the nursery row.
7. Prune only as is necessary to keep in good shape, and remove weak wood. Give heaviest pruning when plants are dormant.
8. Plant a number of individuals of each variety together to get the effect of mass of same color and characteristics.
9. Dig out weak, unthrifty plants, two or more years old, and replace with young vigorous ones.
10. Watch for black spot, the ever-present rose disease, and spray with a good fungicide.