are also destroyed except in the case of the pustule scale. A second application of spray within two to four weeks is necessary for effective control of pustule scale.

Red spider, purple mites, and rust mites are also effectively controlled with parathion, 15 percent wettable powder, used at the rate of one ounce in six gallons of water. Parathion is not effective in destroying mite eggs and does not have sufficient residual to kill newly hatched mites two to three days after application. A second spray application should be made in two weeks to permit time for all of the eggs to hatch and to eliminate adult mites before they can lay eggs.

COMPATIBILITY: Parathion was used with "Flordo" and C-O-C-S fungicides in treating large blocks of camellias. Parathion appeared to be compatible with these fungicides in every respect.

INSECTICIDE PHYTOTOXICITY: To date, the papaya is the only plant which has shown a definite phytotoxic reaction to the application of parathion sprays. Podocarpus nigri also has shown apparent injury. Ardizia and Elaeagnus have also been reported as showing a phytotoxic reaction but tests in the Gainesville area have not indicated any plant injury.

DISCUSSION: While, in general, the results have been very promising, it has been difficult to make a precise evaluation of them. For instance, parathion was very effective in killing crawlers, males and immature female Florida red scales. This was the case with many of the dosages tested while the same dosages often failed to kill the adult female Florida red scale. In this latter instance the action of parathion was very slow—especially in cool weather. Also, though it may not kill in every instance, parathion appears to be of value because it probably reduces the number of eggs laid. Thus a determination of the mortality of adult female scales, which is often used as a test of insecticide efficiency, failed to give a true picture of the effectiveness of parathion. The use of parathion at certain times probably resulted in partial control by still another method. This method was to render females sterile by killing a large proportion of male scales. Thus those females which were not fertilized did not lay eggs and it is suspected that they were more susceptible to attacks by entomophagus fungi.

Several precautions are to be observed when using parathion. Be certain to keep the material labeled at all times. When using this insecticide avoid getting it on the skin and should some get on the skin, wash it off immediately. Stay out of enclosed spaces such as greenhouses, tree canopies, or other similar places where parathion is being dispersed or has been used recently. Stand to the windward side when making applications of this insecticide to avoid drifting spray or dust particles. If these precautions are followed it is felt that there is but little danger involved, especially if the exposure time is short.

GLADIOLUS IN THE FLORIDA GARDEN

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Numerous requests for information on the culture of gladiolus in Florida gardens indicate that increasing numbers of home-owners are growing glads as a hobby. The growth in popularity of this flower over the country has paralleled the rapid growth of the gladiolus flower and bulb industry. Gladiolus is now grown more extensively than any other cut flower plant.

It has been said that gladiolus is a man's flower. Men of various professions and businesses have found the study and growing of this plant so absorbing that their sole livelihood is now the growing of new gladiolus varieties for sale. The growing of glads is enjoyed by tens of thousands of home-owners because (1) gladiolus are easy to grow, (2) they will grow in any garden soil, (3) they are large and
showy flowers with a greater range of color and hues than any other cut flower, (4) they are very suitable as cut flowers for arrangements and corsages, and (5) gladiolus are easily cross-pollenated to form new varieties which differ from one another in many ways including size, shape, color, and disease resistance. Fragrance has been bred into a few of the new ones. Probably no other ornamental plant receives as much attention from plant breeders, including amateurs.

Of the many hundreds of varieties available, the choice for the garden narrows down to those varieties which do not need to be sprayed to control diseases. The gardener should not try to grow some of the varieties commonly found on the cut-flower farms of Florida. Such varieties as Picardy, Wanda, Corona, Leading Lady, Silver Wings, Bingo, New Europe, Ethel Cave-Cole, Algonquin, Badger Beauty, Pink Radiance, Stoplight (red), Surfside and Vredenburg are very susceptible to certain diseases and are therefore not suitable for the home garden.

Some varieties found to be fairly resistant to gladiolus diseases prevalent in Florida are:

**White:** Annamae, Heavenly White, June Bells, Maid of Orleans, Parma, Snow Princess, Wax Model.

**Cream:** Agatha, Canopus, Pacifica, White Gold, Winston.

**Yellow:** Elizabeth Maier, Gate of Heaven, Nugget, Spotlight.

**Buff:** Apricot Glow, Color Marvel, Paradise, Patrol.

**Orange:** Abnaki, Daphne, Marqueeta, Trocadero.

**Salmon:** Dauntless, Dieppe, Margaret Fulton, Ogarita.

**Scarlet:** J. V. Konynenburg, Seminole, Valeria.

**Pink:** Big Top, Blessed Damosel, Bridesmaid, Hearts' Desire, Ivy Robertson, Jeanie, Lady Boo, Phantom Beauty, Spic & Span.

**Red:** Birch Red, Black Panther, Firebrand, Rocket.

**Rose:** Chamouny, Rosa van Lima, Rose O'Day.

**Lavender:** Elizabeth the Queen, Lavender and Gold, Lavender Prince.

**Purple:** Convoy, Purple Supreme, Vulcan.

**Violet:** Blue Beauty.

**Smoky shades:** Bolero, Dusty Miller.

These varieties are sold by some of the many bulb growers located in various parts of the country. The names of these growers may be obtained from commercial growers of cut flowers and from publications of the North American Gladiolus Council and of the New England Gladiolus Society.

Some of these varieties are obtainable only from northern or western bulb growers who harvest bulbs in the fall. Their bulbs can be mailed to Florida by December or January at which time they may be planted. Upon receipt, the package of bulbs should be opened and the bulbs kept in an airy, dry place. If it is desired to hold the bulbs for a month or more before planting, they should be placed in a refrigerator or in a cool place where there is no danger of freezing. The bulbs should be planted before the roots or shoots grow out.

Gladiolus can be planted at any time of the year in south Florida providing the bulbs are held in cold storage. There are no particular soil requirements, any garden soil being suitable if there is good drainage. The bulbs are planted in a shallow furrow and covered about five inches deep. Fertilizer is applied a few days before planting by mixing it to a depth of six inches in the furrow, or the fertilizer may be banded four inches away from either side of the bulbs and about four inches deep at the time of planting. Use any balanced fertilizer containing the minor elements magnesium, manganese, zinc, copper, and boron. Use one pound to 15 feet of row. During the rainy season, it would be best to use a fertilizer with half of the nitrogen derived from insoluble organic materials. Do not use a fertilizer containing calcium cyanamid. Two or three side-dressings of a vegetable fertilizer should be applied in furrows either side of the row as the crop grows. An inexpensive fertilizer without minor elements and without organic nitrogen may be used for side-dressing. Use two pounds per 100 feet of row for each
side-dressing. These applications may be made at two-week intervals until the fourth leaf appears, after which no fertilizer is ordinarily used. The fertilizer bands should be placed just beyond the extent of root growth without breaking the roots. Always apply fertilizer when the soil is moist, or, if the soil is not moist, irrigate immediately after fertilizing. Apply an inch of water by sprinkling.

Gladiolus should be irrigated moderately. The soil should not be allowed to become saturated with water, nor should it be allowed to dry out, although a dry surface mulch is desirable. In most soils gladiolus do best with an inch of rainfall every week in hot weather and when the plants are in spike, or an inch every two weeks in cool weather. Heavy soils and poorly drained soils require less frequent irrigations.

Shallow cultivations should be made when necessary to control weeds. Beginning as soon as the shoots emerge, dust the plants every week with five percent DDT dust to control worms and thrips. If DDT dust fails to control the insects, or if red spider mites attack the leaves, dust with one percent Parathion. Do not breathe the dust and wash it off hands before smoking or eating. Keep Parathion away from food and children and do not dust vegetables with it just before they are to be consumed.

Most of the recommended varieties are resistant to the Curvularia and Stemphylium leaf spot diseases. These varieties may be attacked during cold weather by Botrytis disease. If it is desired to protect the plants from disease, this may be accomplished by spraying or dusting with Dithane or Parzate.

About five weeks after the flower spike blooms, the bulbs are ready to dig. The bulb is loosened with a shovel or fork and pulled up by the top. The top is clipped off close to the bulb. Dust the bulbs with DDT and keep them in a well ventilated, warm place until the old bulb can be broken off easily. Bulbs are usually “cleaned” two weeks after digging. As soon as the old bulb and roots are cleaned off, press the base of the new bulb in Spergon or in Arasan dust. Use either the wettable or the seed-treating formulation of Spergon. Sprinkle three or five percent DDT dust over the bulbs to control thrips. Keep the bulbs in a dry, cool place. They are ready to plant when root buds appear around the core at the base of the bulb. If bulbs are to be held for staggered plantings over a period of months, they should be kept in a refrigerator. The best temperature is 36° to 42°F. if the bulbs are to be held for several months. Bulbs dug in late spring should be held in cold storage for two months or more if they are to be planted in the fall.

Most garden soils become heavily infested with nematodes. There are three fumigants which may be used in the home garden to control nematodes and certain soil insects: DD, EDB (ethylene dibromide), and MC-2 (methyl bromide). In addition, MC-2 controls weeds and some fungi causing plant disease. DD and EDB are applied as liquids or in capsules. EDB is less toxic to the operator and pleasanter to use than DD. In using these materials, follow the manufacturers’ directions carefully.

MC-2 treatment is particularly adapted to the home garden because it is a convenient and a practically fool-proof method of controlling weeds, soil insects, and nematodes. MC-2 is methyl bromide plus two percent of the “warning” gas, chloropicrin, held under pressure in one-pound cans. The soil should be well prepared and moistened as previously described. It is covered with gas-proof paper or treated tarpaulin. The central area of the cover is supported a few inches off the soil and the edges of the cover are buried with some soil. Release of the gas under the cover is accomplished with the aid of a “Jiffy applicator.” Merchants who sell MC-2 should be consulted regarding type of cover to use and method of treating the soil. Leave the cover on two or three days. After the cover has been removed an hour or two the soil may be planted. Do not contaminate the area with untreated soil.

Tests indicate that gladiolus bulbs and bulblets grow much better when mulched with aluminum foil. This mulch will keep down
weeds, hold moisture, and sometimes save fertilizer. The fertilizer is applied as the bulbs are planted, placing the fertilizer about six inches deep and four to six inches either side of the bulbs. A 12 to 18 inch strip of foil is placed on the soil either side of the row so that an uncovered area two or three inches wide is left directly over the planted bulbs. The edges of the foil must be weighted down to prevent tearing by the wind. The foil is left in place until the bulbs are dug. Water can be run down the row for irrigation if necessary. Fertilizer should be kept away from the foil because some fertilizer salts can destroy the metal. Mulching with other materials also would presumably be helpful in growing gladiolus.

THE GENUS JASMINUM IN FLORIDA

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Species of the genus Jasminum have been grown as ornamental plants, mostly in the tropical and sub-tropical areas around the world, for many hundreds of years. The genus name Jasminum is also used as a common name for members of this genus and they are also called jasmine and jessamine, all of which are accepted common names. In fact, certain sweet scented species of Jasminum are so well known that several other plants which do not belong to the genus Jasminum but which have sweet scented flowers are also called jasmine or jessamine. The so-called Spanish or Catalonia jasmine is used in the manufacture of perfume in Europe.

Several species have been brought into Florida and a number of these are now used to a considerable extent in landscaping. The nomenclature of the Jasminum is badly confused so that the correct name is not always applied to a species. Because of this there are several species that are now being distributed under the incorrect name in Florida.

A simple way to separate the species growing in Florida would be to group them first on the basis of flower color into those having white flowers and those with yellow flowers. Each of the flower color groups can, in turn, be divided into those with simple leaves and those with compound leaves.

WHITE FLOWERS

SIMPLE LEAVES. The furry or downy jasmine, Jasminum multiflorum Andr. (J. pubescens Wild.), a native of India, is probably the one most planted in Florida. The pure white star-shaped flowers, about an inch across, are borne in few to many flowered clusters. The calyx teeth are about ½ inch long and covered with spreading yellow hairs. Though flowers are in evidence throughout most of the year, they are produced in greatest abundance during the summer and fall months. The flowers are not fragrant. It is a strong woody vine which will climb to a height of 20 or more feet by scrambling over its support. This plant is more commonly grown as a shrub than as a vine. Its deep green foliage is dense and the young leaves and stems are quite hairy or pubescent. The leaves are simple, opposite, acute, rounded or slightly heart-shaped at base and 1 to 3 inches long. This plant is usually severely injured by temperatures of 25°F. or lower but it comes back quickly from the roots and will bloom again in the fall.

The pinwheel or star jasmine, Jasminum gracillimum Hook., from North Borneo, is very similar in general appearance to the furry jasmine so that there is little choice or distinction made between them for ornamental plantings. It has a more graceful flowering habit, the branches are less pubescent and the somewhat larger flowers are fragrant and are borne in dense hanging heads. The calyx is sparsely covered with close not spreading pubescence (Fig. 1-E).

Jasminum sambac Ait., the Arabian jasmine, came to us from India where it is native. It is an old favorite which may be grown as a low climbing vine or trained as a shrub. The very