Carolina Camellias

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Carolina Camellias

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In This Issue

About the Cover

This is the variegated form of 'WILL SUMMERSET,' a seedling produced by the Pioneer Greenhouse grower of camellias in the Columbia area. Mr. Will Summerset has entered this lovely soft pink seedling in a number of shows, having won the seedling class in several shows with it, and always coming away with at least a blue ribbon. The variegated form was voted the best seedling in the North Florida Camellia Society Show at Jacksonville on December 6, 1964.

SOUTH CAROLINA CAMELLIA SOCIETY

President's Message

JOHN A. TYLER, JR.

DEAR FELLOW MEMBERS:

As I write this the January weather is at its best—warm and spring like and the camellias are beautiful—I hope that the rest of the season is as good. I also hope that all of you have attended, entered, and won in many of the the shows. The shows are our best way to see the newer varieties, the best way to see old camellia friends and make new ones, and also the best way to introduce new people to the beauties and satisfaction of camellias.

Do not fail to try some of the hybrids of the 'DONATION', 'BRIGADOON' type . . . while they may not be "best of show" type flowers the way they bloom all up and down the stem make them superior garden plants.

I know that you enjoy your *Carolina Camellias*—the only way we can make it better is to get more members. Send their $3.00 to P. D. RUSH, LEXINGTON, S. C. Let's make the SOUTH CAROLINA CAMELLIA SOCIETY better and bigger—get more members and attend more meetings, and if you know something interesting concerning camellias send an article to Carroll Moon for publication in *Carolina Camellias*, and let us all share it.

Sincerely,

JOHN A. TYLER, JR.,
President.

GEORGIA CAMELLIA SOCIETY

President's Message

STUART WATSON

TO THE MEMBERSHIP:

As usual, I have let Carroll's deadline get right on me before I write this letter to the membership. As a result, I suspect that I'll touch in a rather disjointed fashion on the two or three things that are on my mind this morning.

First I want to express my appreciation for the cooperation I have received in my efforts to help Carroll get articles for *Carolina Camellias*. This must be a cooperative project. Despite Carroll's yeoman workmanship, no one can do this job all by himself. I hope the membership will continue to cooperate whenever requested. Even more valuable, would be having members with ideas for articles, personality studies, or anything else that would be of interest to the camellia world to go ahead and write for *Carolina Camellias* even without a request. After all, Carroll and I cannot know just what is on your mind and what you would be interested in writing.

My second thought this morning arises from the card I got from Mr. McCoach when he agreed to tell the membership of his fertilization program. His card suggested that I arrange for Camellia Farms to give him a commission on plants sold to replace those killed. Not too long ago I read an article on various specialties within the camellia field. No one grows better flowers than McCoach. His blooms are invariably breathtaking. He is always a threat to take the award for best bloom in any show and has already won Jacksonville and Tallahassee. But his card indicates that he pays a price for these fantastically beautiful blooms. That is his interest and his specialty within the many specialties available in the broad spectrum of the camellia world. Some of us may be interested in seedlings, pollination for the production of hybrids, or any of a number of other variations as suggested in the article referred to. However, I suspect that most of us are interested in the show winning bloom and the unsurpassed landscape shrub. We do have to make something of a choice, though the choices we make do not have to be mutually exclusive. Whatever your principal field of interest, *Carolina Camel-*

lias and the other camellia publications will help you to more nearly satisfy that interest.

My third and final thought this morning is, in many ways, the most important. The ACS Endowment Fund is certainly a project that deserves our help. I just had a letter from Joe Pyron which suggests that Georgia is lagging behind some of the other states in contributions to the Endowment Fund despite the fact that we have the largest number of members, probably the largest number of active societies, and the new headquarters is to be at beautiful Massee Lane in Georgia. You do not have to be overrunning in money to help the ACS Endowment Fund build a permanent headquarters with research facilities and to maintain Massee Lane. We would like to have Five Hundred Dollar contributions (or more if possible but not necessarily) from as many of the members as possible. These contributions do not have to be in cash. As a matter of fact, I plan to pay mine at the rate of One Hundred Twenty-Five Dollars a year because Five Hundred Dollars is a little too much for me to put out at one time. So come on and let's show up the other states. Let's prove that Georgia is, in all respects, including liberality, the outstanding camellia state in the nation. Write a check today and send it with your pledge to me at Post Office Box 41, Albany, Georgia 31702, or to Joe Pyron, at ACS Headquarters in Tifton (Post Office Box C).

I look forward to seeing as many of you as possible at the remaining meetings during this year.

Sincerely yours,

G. Stuart Watson,
President.

NORTH CAROLINA CAMELLIA SOCIETY

President's Message

L. L. Trammel

Dear Members and Friends:

In this day of technological advancement we are in the midst of a tremendous change in horticulture, plant science, plant pathology, and many other phases of science.

Thus the day is here where guess work and poppy cock is not responsible for growth of a good camellia plant and showing a good blossom.

In view of this, I want to call your attention to the following people or publications that may add to your present SKILL in working with plants.

If you have diseased specimens send them for diagnosis (a free service), but the following should be observed:

Enclose the specimen in a plastic bag with 1 teaspoon of water and close the top. Pack this in a box so that it will not be crushed in shipping, and include where the plant was/is growing, fertilizers used, sprays, etc.

Send to:

Dr. Robert A. Aycock
Plant Disease Clinic
Plant Pathology Department
N. C. State University
Raleigh, North Carolina 27607

No one should be without a copy of the N. C. Pesticide Manual. It cost only $1.25 and is up-dated each year. Order from:

Division of Continuing Education
Box 5125
Raleigh, North Carolina 27607

Lastly, don't forget our spring meeting March 18 at the Voyager Inn in Greensboro, N. C. Plan to be there, bring a friend, and show a blossom.

Speak to a stranger about our society, what we have to offer, and sign him up.

Regards,

Larry L. Trammel,
President.

VIRGINIA CAMELLIA SOCIETY

President's Message

EUGENE M. WORRELL

DEAR MEMBERS:

It is with great pleasure and pride that I wish to announce the great success we had from our first Fall Show held November 19th and 20th. Several thousands of people were on hand to view the outstanding blooms exhibited at the Coleman's Nursery. So many of our visitors were amazed to see the real late blooms blooming at this time of the year.

At this time I'd like to thank all members who helped make this show the success it was.

In my last message I stated that we had 165 members on our register and that our goal was 200. I am pleased to state that we now have 190 members, and I believe we will surpass our goal of 200 within the next month. I sincerely appreciate the efforts of each member helping to make our Society grow.

Mr. Fred Heutte is chairman of our show that will be held April 1st, and 2nd, at the Norfolk Botanical Gardens. Let us all give him our full support.

We of the Norfolk Society cordially invite everyone to visit Norfolk and attend our show at this time. Our Preacher Parsons will be waiting to greet you all.

Sincerely,

EUGENE M. WORRELL,
President.

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Fertilization of Ornamental Plants

By J. Stewart Howard
Laurel Lake Gardens & Nursery, Inc.
Salemburg, N. C.

Ornamental plants do best when provided with adequate supply of fertilizer nutrients and water the year around. The amounts needed at any one time will vary with the season. By selecting high quality fertilizers* and by properly timing their application, we have been able to provide our plants with an adequate amount of nutrients at all seasons with just two applications per year.

Winter Protection

Many years ago we realized that our fertilizer program played a big role in protecting our camellias from winter freezes. When we started we used a 4-8-8 azalea and camellia fertilizer. Two years later we added on 0-14-14 fertilizer in the fall which was supposed to harden camellias for winter. We dropped the 0-14-14 after two years. Ten years ago we started using an 8-8-8 pelletized fertilizer. Two years later we started supplementing the 8-8-8 with enough ureaform nitrogen (38%) to bring it to a 16-8-8.

Two years ago one of the large fertilizer companies offered a special 16-4-8* fertilizer with 75% of the nitrogen derived from Nitroform (a slow release, non-leaching and non-burning ureaform nitrogen). We have used this fertilizer on our camellias, azaleas, hollies and other ornamentals, and have obtained better results and less winter damage with it than with any other fertilizer program we have ever used.

Fertilization at Planting Time

For individual plants, dig a hole 2 feet wider than the root ball and thoroughly mix the fertilizer with the backfill soil which contains 50% peat moss. Soil tests are desirable, but as a general rule the following suggestions will adjust the pH to 6.0 to 6.5 and provide adequate fertilization.

1/3 cup of 16-4-8 plus 1/3 cup of Dolomitic (Agricultural) Limestone to an 18-24" plant.*

*2/3 cup of 16-4-8 * plus 2/3 cup of Dolomitic (Agricultural) Limestone to a 24-30" plant.*

*1 cup of 16-4-8 * plus 1 cup of Dolomitic (Agricultural) Limestone to a 30-36" plant.*

Water well after planting.

For group plantings, prepare a bed by spreading a layer of peat moss 4" deep over the entire area to be planted and add 4 pounds of 16-4-8 * plus 4 pounds of dolomitic limestone per 100 square feet. Thoroughly mix the peat moss and fertilizer with the soil to a depth of 12 inches.

Soak the bed with water after planting.

Maintenance Fertilization

After planting, our general rule is to make two fertilizer applications annually.

The first application is made in March or early April.

The second application is made in July or August.

Water well before and after fertilizing.

For individual plants we spread the fertilizer evenly under the outer branches of the plant.

*1/4 cup of 16-4-8 * to a 18-24" plant.*

*1/3 cup of 16-4-8 * to a 24-30" plant.*

*1/2 cup of 16-4-8 * to a 30-36" plant.*

For larger plants we increase amounts proportionally.

For bedded plants apply two pounds of 16-4-8 * per 100 square feet of bed area.

Periodic applications of dolomitic (agricultural) limestone usually are needed to maintain a pH of 6.0 to 6.5. We have found that all our plants (including camellias and azaleas) grow best at this pH range. Soil tests are desirable, but as a general rule an application every three to five years at the rates suggested above (at planting time) is adequate.

* The 16-4-8 we use has 75% of the nitrogen derived froom Nitroform, a slow release, non-leaching and non-burning ureaform nitrogen. We do not suggest you follow our fertilizer program unless you use a fertilizer which contains at least 50 to 75% of the nitrogen as ureaform nitrogen.

—CAROLINA CAMELLIAS—

Did you know . . .

We start our fertilizing program about February 1 so that when new growth starts the last of March or first of April it will have something to give it a good push.

We use the most complete commercial fertilizer we can buy. By that we mean one that contains all the elements, major and minor. You can check this as each bag carries an analysis. We still use the old rule-of-thumb one handful to each foot of height. This is applied out away from the stock of the plant where the water drips off the leaves. You can rake the mulch back and apply the fertilizer, but we take the lazy way, we apply it on top of the mulch then water it in well. You should never apply fertilizer to anything without following it with a good watering job.

—FRED MCGEE.

The National American Rhododendron Society Meeting and Show will be held in Asheville, North Carolina May 7, 8 and 9. Plan to attend.

Growing Camellias Under Controlled Conditions

By Harry A. Shealy

Throughout the camellia growing areas, greenhouse culture is being steadily increased. Many very wise words have been spoken and written on potting soils, drainage, fertilization and chemical usage. This has resulted in great advances in the production of better and bigger blooms.

There seems to be, however, another field offering further possibility of improvement and that is growing camellias under controlled conditions which, if properly practiced, could still improve both quality and add longer enjoyment of the flower. Under controlled conditions, flowers have been known to stay fresh for fifteen days.

To get these conditions, greenhouses should be equipped with three controls. First, controlled humidity is a must. The flower itself is a high percentage of water; therefore, to keep the bloom fresh as well as to get the highest quality, the correct amount of water should be maintained in the air at all times. This would undoubtedly assure quality blooms and many additional days of freshness. This would be especially true on hot, low-humidity days experienced in most camellia growing areas.

To control humidity in the greenhouse is fairly simple and inexpensive. The house would need 110-volt wiring (same as residential); a solenoid valve and a humidistat is necessary. Spray nozzles or atomizers which are designed to work on city water pressure are the other necessary items.

The humidistat is the real heart of controlling. It is activated by a membrane sensitive to water. This membrane expands when wet and concontracts when drying. For example, as the element contracts it allows electrical contacts to send energy impulses to the solenoid valve, which turns on the water. This continues until such time as the element stretches, stopping the impulses, thereby deenergizing the solenoid valve and cutting off the water. The amount of humidity desired may be lessened or increased by adjusting the humidistat. Conditions remain constant until it is decided other changes are needed.

These valves may be purchased at either plumbing or washing machine supply houses. The number of nozzles needed would have to be determined by rule of thumb rather than by calculation, as many variables are readily apparent, such as size of house, depth in ground, number of plants, how tightly the house is built, and how much sun or shade, inc. It would be best to have an ample supply on hottest and driest days.

Temperature control is the second area vitally needed. A regular thermostat will turn heat on or off at pre-

determined levels, never allowing the greenhouse to get too hot or too cold.

Thirdly, a small exhaust fan should be installed at either end of house, preferably at the highest point. A louvre should be installed in the opposite end. This louvre would only open when the exhaust fan creates a vacuum and should close when the vacuum ceases. This fan should be activated by a regular thermostat when the heat goes up to a level which is harmful to the blooms. This will keep the house cooler by removing the hottest air, but will pull breezes above the plants, thus minimizing flower damage. The humidity system will, of course, run more. However, the water temperature is generally cooler, thereby is an aid in reducing heat.

It might also be added that on cold nights when heaters are running continually, controlled humidification will also add heat units from the water to aid your heating system.

Controlled conditions keep your blooms from drying out when it is cold and heaters burn out the water, or when it is hot and dry. However, there are other advantages when the greenhouse conditions are automatically controlled. Not only will better blooms be grown, but savings will be realized on electric and water bills, cuttings will root much better and more easily, and bare-rooting will be much less hazardous.

Finally, there will be some who will say that there is ample humidity because of water on top and sides of the house. This is not entirely correct, because this is condensation and doesn't necessarily mean the correct amount of humidity at all. Humidity is very minute particles of water suspended in the air, barely visible unless moisture is rather high, and should not damage the most delicate of flowers. Condensation, on the other hand, is large globules of water. These globules of water will damage blooms because of weight and distance of fall.

It is therefore recommended that each grower find the conditions producing best results, as is done with soils, fertilization, etc.

Wouldn't it be wonderful to take a winter vacation—going to shows, hunting new camellias—and not worry whether the heat is on or off, whether the camellias are too dry or too cold? Controlled conditions will not only grow better, long-lasting blooms, they will give you more peace of mind.

The Effects of Anti-Transpirants on Transpiration of Six Species of Woody Ornamental Plants

By Larry L. Trammel

Introduction

Epidermal surfaces of most land plants present major barriers to the escape of water vapor and to the exchange of gases with the atmosphere. The stomatal pores of the epidermis are major parts of exit and entry to the interior of the leaf. Since these pores are opened and closed by the very specialized epidermal guard cells which surround them, vapor and gas exchanges between the plant and its environment are regulated.

Water is taken up from the soil through the plant roots and then is transported up the stem and into the leaves through the vascular tissues. Water diffuses from the cells of the leaf into the intercelluar spaces and passes through the stomata into the atmosphere.

Since the greatest amount of transpiration occurs in the stomata (located on leaves), the effectiveness of chemicals in reducing water loss must be by stomatal control. There are two major types of anti-transpirants; (1) chemicals which are applied to the leaf area and cause the stomata to remain closed for a period of time regardless of the presence or absence of light, and (2) chemicals which are applied as a film over the leaf surface, including the stomata.

Anti-transpirants have been known and used for more than fifty years, but information on experimentation covering the effects of these materials on transpiration is limited.

Abstract

The effects of five commercially prepared anti-transpirants, D-Wax, Weather Shield, Wilt Pruf, Medsa I and Medsa II, were studied on six species of woody ornamental plants. Two tests were conducted with each plant cultivar.

Six-inch cuttings of *Rhododendron obtusum* "Red Wings," *Ilex Cornuta* "Burfordi," *Ilex Crenata* "Latifolia," *Forsythia intermedia,* "Spectabilis," *Juniperus horizontalis* "Plumosa," and *Quercus phellos* were dipped in each of five commercially prepared anti-transpirants. The cuttings were weighed after each treatment and at the end of five days. Daily measurements of water loss were recorded. There was a net loss in weight of the cuttings of 0.1 to 0.4 grams.

D-Wax reduced transpiration when applied to *Rhododendron obtusum* "Red Wing," *Forsythia intermedia*

"Spectabilis" and *Juniperus horizontalis* "Plumosa."

All chemicals were effective in reducing transpiration in *Quercus phellos.*

Weather Shield and Medsa II reduced transpiration of *Ilex Crenata* "Latifolia."

Medsa I and II were effective in closure or partial closure of 60 per cent of the stomata, but Medsa I damaged all plant material treated.

—CAROLINA CAMELLIAS—

Did you know . . .

It's time to start your spraying program, particularly if you are going to use Cygon (other trade names are Systox, Disyston and Scope). The first application should be applied when new growth leaves reach about full size. You know the sap is really beginning to rise. Then you *must* make a second application five or six weeks later. If you used Cygon last year at the proper time and a second application in the six weeks period you will only have to make an application this year if it is applied when new growth is the right size.

If you are going to use Volck make your first application when you see other insects and flies moving around. This will kill the first bunch of scale that has hatched out. If you have a bad infestation you should apply Volck again about two weeks later. You may have to make a third application to get a complete kill. The scale hatches out at approximately two-week intervals until all have been hatched.—FRED MCGEE.

Fertilization of Greenhouse Camellias

By Frank S. Watters

Readers of the Camellia journals have probably noticed there are fewer articles on Camellia feeding than any other phase of Camellia culture. Few writers wish to be specific for fear of contradiction and probably more important because they do not choose to divulge secret techniques to competitors who are trying to outdo them.

Anyone who has developed a successful fertilization program which gives satisfactory results should stick with their success. For those who want to experiment or change their fertilization program, I would like to review several principles of Camellia feeding based on information already published in various pamphlets, and journals, and my personal experience over a period of years.

The basic principle in the fertilization of Camellias should be to maintain the supply of nutrients in the soil when the plants need it. Camellias are woody, evergreen plants, which are relatively slow growers and their root systems are not as vigorous when compared to most of the plants. A camellia plant does not require a large quantity of nutrients in a short time as do, for example, farm crops, but a camellia needs a steady year around supply of nutrients.

Soil acidity and pH level for camellias has been the subject of much discussion and investigation. Most efforts have been directed toward determining a specific pH value which would be satisfactory for growing camellias under any condition and in all locations.

In a book published in 1958 entitled "Camellia Culture", Dr. Milton Freeman, Extension Soil Specialist of the University of California, reviewed the subject of soil pH (pages 321-322), and I quote in part: "The degree of acidity or alkalinity of a soil or water is expressed in terms of pH values. The pH scale is divided into 14 divisions numbered 1 to 14. Soils of pH value of 7 are neutral. Soils with pH values above 7 are alkaline while those below 7 are acid or sour. Soil pH is one of the factors affecting the growth of plants. It is generally assumed that the camellia is an acid-loving plant and grows best in moderately acid soil. Research by Bonner and Honda at the California Institute of Technology led them to conclude that the camellia is relatively insensitive to soil or nutrient acidity over a wide range. It was further concluded that the growth of camellias is not greatly affected over the pH range of 5 to 7. Most camellia soils are usually kept acid by the use of acid peat moss, acid leaf mold, acid-

type fertilizers, ferric sulfate, alum or other acidifiers. Too acid a soil can be buffered (neutralized) by use of basic slag or lime."

Soil or water pH can be checked using pH paper. The Camellia Journals carry ads for pH kits which can be purchased and have complete equipment and instruction for use.

A balanced plant food should consist of nitrogen, phosphoric acid, potassium and essential minerals. The phosphoric acid and potassium are essential to the development of a healthy root system as well as the setting of flower buds. The development or growth of the buds, size of flowers, and growth of the plant depend more on the nitrogen than other elements in fertilizers. There are many brands of commercially available fertilizers with nitrogen, phosphoric acid (as superphosphate), potassium (as potash of sulfate), in the desired ratio of 6-8-8. We have found that supplemental nitrogen feeding is desired to maintain the plants at their peak. Nitrogen supplied by organic fertilizers such as manure, dried blood, and cottonseed meal depends on decomposition by soil organisms. Therefore, the nitrogen released is extended over a long period of time. Inorganic high nitrogen fertilizers, as for example, Nugreen, Uramite, and Urea, are completely water soluble and supply readily available nitrogen at any time. We have found that Uramite is a completely satisfactory source of nitrogen and use it in preference to manure (or barnyard tea) or dried blood both of which are messy to handle, unsanitary, and take too much work to prepare. Uranite needs to be applied to the plants, according to the directions on the package, once in March and once in October. We have yet to have any evidence of burning on our plants from this slow-acting form of nitrogen. Once our container plants are returned to the greenhouse for the fall and winter period, we begin using liquid plant food such as "Ortho" liquid Azalea-Camellia Food. This is a 10-8-7 formula fertilizer containing a Chelating agent and such minor essential elements as zinc, iron, manganese, boron and moylbdenium.

The amount of fertilizer and the schedule of application which we use is as follows:

First Application

Apply ½ cup of granular AC fertilizer to each plant in a 3-gallon or larger container in March—also apply 2 tablespoons of Uramite to each container.

Second Application

Repeat first application of AC fertilizer only in June. Do not apply Uramite.

Third Application

Repeat application of AC fertilizer in September and also foliage feed each plant with Ortho Liquid Azalea-Camellia food according to formula for foliage feeding on the bottle.

Fall and Winter Application on Greenhouse Plants

Dilute Ortho liquid Azalea-Camellia food (10-8-7) *according to formula on the bottle* and water each plant with the diluted solution once a month in October, November, De-

cember, January, and February. Thoroughly soak the plant with water first and then with the fertilizer solution.

There are a few words of caution which all growers must bear in mind. First, the container grown plants have a confined root system and limited soil. The above described fertilization program will work well if the plants have a healthy, normal root system which can tolerate the above quantities of fertilizer. For plants in small containers use proportionately less quantities of plant food. Secondly, plants should be watched for signs of fertilizer burning (the tips of the leaves turn brown). Watering the plants before and after the application of the dry, granular fertilizer should prevent burning. Should evidence of burning be noticed, thorough watering to wash out the excess fertilizer should be done immediately.

Anyone interested in a technical discussion on the chemistry of plant nutrients should read the articles in the *Camellia Review*, Vol. 26, No. 4, February 1965 and Vol. 26, No. 5, March 1965, published by the Southern California Camellia Society.

—CAROLINA CAMELLIAS—

Did you know . . .

'WRONG' was about as far out as you could get in naming a beautiful camellia, but now up comes 'CUE BALL'. We do not see where this name could have anything in describing a camellia bloom. It makes us visualize a huge gibbed bud of 'INDIAN SUMMER' that is bull nosing and is as slick looking as an onion.—FRED MCGEE.

North Carolina Camellia Society To Hold Spring Meeting

Spring Meeting of the N. C. Camellia Society sponsored by the Piedmont Men's Garden Club, will be held March 18, 1967 at Greensboro, N. C. with headquarters at the Voyager Inn, 830 West Market St. Please reserve your luncheon tickets at $4.50 each with Mr. George C. Hampton, Jr., 901-903 Southeastern Bldg., Greensboro, N. C., immediately.

At the Fall Meeting in Wilmington

Left to Right: Henry Rehder, Wilmington, N. C., *Program Chairman;* Mrs. A. J. Parsons, Norfolk, Va.; George C. Hampton, *President N.C.C.S.;* Mrs. George C. Hampton; Allison J. Parsons, Norfolk, Va., *President-Elect A.C.S.*

SECONDDAYMANSHIP

Advice to Show Chairmen, Water Boys, et al.

By Frank Reed, Pasadena, Calif.

This extension of my remarks on "Treatment of Cut Flowers" in the January and November 1966 issues of Southern California Camellia Review and the 1967 ACS Yearbook is due to recent observations and conclusions. The immediate purpose is to have better blooms on the second day of shows. The ultimate fallout of better techniques would be to have better flowers during the second week and the second month after they are cut. Hopefully, we think that show cancellations can be eliminated by early bloom cutting.

Suggestions

(a) A 250 parts per million (ppm) acqueous solution of alpha-Napthaleneacetic Acid (NAA) be used instead of water in the containers for each camellia at shows. Bonner showed that having the stems in contact with this solution was best and apparently added two days of good condition to cut camellias. One gram (skimpy teaspoonful) of NAA is an adequate amount for 2½ gallon pail of water.

(b) The camellia blooms should all be sprayed the evening of the first day with this NAA solution to help preserve them.

(c) Containers for Large and Very Large camellias should be approximately four inches in diameter. The containers for our fall LACC show were only two inches in diameter. Wm. S. Stewart points out that normally the greatest stress in the petal is at its junction with the stem and he believes that stress would be increased by the use of these small containers. The poor condition of 'Coral Pink Lotus', 'Clarice Carlton', 'Drama Girl' and 'Jessie Katz' may be partially due to lack of support by these small containers.

(d) If camellia blooms are not allowed to stay on the bush until they are completely spread out, you can be more sure of the NAA spray getting down into the axis of the bloom thus making the petals stronger especially at the junction with the stem. This applies to those mentioned in (c) and formals like 'Alba Plena' and 'Alice Wood' whose petals tends to curve outward and stick close together.

(e) The Anemone blooms like the 'Elegans' family and 'Gigantea' may be helped by spraying down into the petaloids especially if there are not too many stamens in the bloom.

(f) In our desert, oasis of, it may be well to get a forecast as to the possibility of hot desert air being prevalent during the show. If the answer is positive, it would be well to rent air conditioning equipment to bring up the humidity in the show rooms if such equipment is not already installed. Another plan is have blooms cut a week or two before the show

when weather is fairly normal rather than pick relatively dry flowers the day before or the day of the show. This early cutting of blooms could be used as insurance against freezing and rain just before show time.

Recent Observations

LACC Show on December 10-11, 1966, was met by very dry air. In Pasadena, the relative humidity was 17% or below at noon of the 9th, 10th and 11th. The recorded low each day was 10%. The Santa Ana winds of the 11th made the front page (cols. 2 and 3) of the *LA Times* on the next morning.

Reed's 6 blooms which were picked on the 9th and 10th and made the head table performed badly. One needed to be replaced on the 10th and three on the 11th. All six looked rather sad at the last of the show.

The North-Reed seedling (CNR-2) bloomed normally November 16th and was cut on the 18th. It was runnerup in the show. It was in excellent condition on the second day. It was recovered from the trash can after the show and kept under good humidity conditions. On January 16, some of its petals were still turgid. My other blooms at the show generally acted more like CNR-2 except those which should have had the treatments (d) and (e) above. A majority of my blooms were cut a week or more before the show.

Hermocallis—Companion Plant for Camellias

By Charlotte Holman

I am sure that you love and grow Camellias else you would not be reading this publication. I'm wondering though, what picks up and holds your interest when the last lovely camellia has gone? Rhododendrons perhaps? They are breath-takingly beautiful but certainly not easy or simple for the South. Have you tried Hermocallis? Little Cherub is a low, large flowered clear yellow and starts blooming in late March or early April. Since it reblooms and is evergreen, it is a choice border plant. From May on to frost, you have a wide choice of colors, all except pure white; of forms that are flat, twisted, curled, quilled and cup-shaped; of size, huge, medium or small to tiny; of frilled and ruffled petals or plain tailored ones. There are daylilies that open in the afternoon, remain open all night and day and close the following night. My own Country Doctor is a good example. A large percentage of the newer daylilies rebloom, today Sept. 20th we still have rebloom on a number. A daylily today is such a vast improvement over yesterday's that it is to all intents a new flower! High bud count, new colors, minus the old muddy brown look, good branching and healthy growth in the garden are all musts.

Color, in some of the newer ones, is almost unbelievably and truly indescribable! White overlaid with flesh pink, pale, yellows, brilliant scarlets, deep reds, lavenders, purple, all shades of pink, one color edged or eyed in another and on and on.

Their few cultural demands have endeared them to all who give them a chance. They belong to the classification Herbaecons perennials, nearly all are evergreen or semi-evergreen this far south. They are not cranky about soil or fertilizer, accepting whatever you have and thriving on it. They need sun, at least half a day to bloom well and appreciate lots of water when the buds begin to show. As a whole, they are rapid propagators, some varieties sending out small plants on the bloom scapes, which are true to the variety, called proliferations. Therefore the price on new ones drops faster than almost any other flower. It is entirely possible to buy some of the best daylillies from $1.00 on. You may also pay $100.00 per plant for some of the new Tetraploids—if you really become hooked! Frankly, in this day of labor scarcity, it is a delight to find a plant that gives so much for so little! Why don't you try a few?

The Treatment of Camellia Flower Bud With Gibberellic Acid

By W. F. Wilson, Jr.
Fruit and Truck Experiment Station
Hammond, La.

With the widespread use of gibberellic acid on camellias, many observations on the methods of its use have been offered to the camellia growers.

Very little definite information has been recorded regarding the effectiveness of the methods of applications or the number of applications. During the 1964-65 flowering season this preliminary test was planned to compare the application of the material by two methods and of one versus two applications for the same bed.

The most used method of breaking out the vegetative bud adjacent to the flower bud and placing the drop of "Gib" in the receptacle made by this method was compared with slitting the bark of the stem for one-half inch just below the flower bud and applying the drop of "Gib" in this slit—this has been designated hacked for convenience.

A large plant of fourteen varieties growing in the open was selected for this test.

Two buds for each treatment including a control were used on each plant practicing selection in an effort to use buds of the same quality and size.

These buds were chosen from the same general area around the central portion of each plant whenever possible rather than the higher and lower buds on the plants.

In moving from one plant to another a different treatment was chosen each time to start with on the new plant, thus varying the order of applications.

Two observations are worthwhile regarding these treated buds with respect to the blooming of the plant itself.

Uniformity of blooming or results are very difficult to obtain as there will be one or two treated buds in the group that for some reason will bloom very early and ahead of similarly treated buds or delay and be many days later in blooming than the main group of buds.

Potassium gibberellate at the rate of 10,000 ppm was used for all treatments.

The initial treatment was made on September 19, 1964, with the second application made October 6, 1964.

Table 1 shows the number of days from treatment until blooming. Although, there are many wide variations in the results the averages for the twenty-eight buds involved for each treatment indicate very definitely the superiority of the method of breaking out the adjacent vegetative bud for application of treatment.

TABLE I

Number of Days to Bloom

Method of Treatment

Variety	*Veg. Bud*		*Veg. Bud + Veg. Bud*		*Veg. Bud + Hack*		*Hack + Hack*		*Veg. Bud + Veg. Bud*		*Hack + Hack*		*Cheeks*	
	Bud 1	*Bud 2*	*Bud 1*	*Bud 2*	*Bud 1*	*Bud 2*	*Bud 1*	*Bud 2*	*Bud 1*	*Bud 2*	*Bud 1*	*Bud 2*	*Bud 1*	*Bud 2*
Mathotiana	32	32	37	30	32	30	35	60	52	48	30	..	112	96
Audusson Red	32	38	28	33	32	38	43	46	33	..	48	43	98	111
Audusson Var.	36	54	..	45	38	54	48	..	..	56	..	..	93	127
Winifred Womack	32	35	35	29	32	29	33	46	32	53	47	42	89	106
Arlene Marshall	32	33	45	52	37	38	38	125	62	59	83	72	141	143
Morning Glow	88	45	35	41	38	38	84	108	48	44	41	38	111	..
Richard Nixon	41	41	51	54	38	51	58	62	51	46	102	61	103	104
Mathotiana Supreme Var.	48	51	48	48	48	..	38	71	112	48	51	41	76	77
Rosea Superba	54	40	36	37	45	47	51	66	68	54	48	48	59	117
Bell Rankin	42	42	58	46	36	44	103	109	58	72	89	58	103	114
Mrs. Baldwin Wood	54	47	57	60	40	42	97	lost	45	51	73	54	128	119
Frizzle White	56	67	44	62	42	52	85	69	51	51	62	51	71	79
Tickled Pink	107	89	99	58	67	141	75	69	132	108	58	141	149	143
Patience	108	77	70	69	61	131	145	119	61	67	102	93	135	137
Aver. Days to Bloom:	51.89		48.47		48.93		76.88		56.38		64.68		108.93	

TABLE II

Size of Bloom in Inches

Method of Treatment

Variety	*Veg. Bud*		*Veg. Bud + Veg. Bud*		*Veg. Bud + Hacked Stem*		*Hacked Stem + Hacked Stem*		*Hacker Stem + Veg. Bud*		*Hacked Stem + Hacked Stem*	
	Bud 1	*Bud 2*	*Bud 1*	*Bud 2*	*Bud 1*	*Bud 2*	*Bud 1*	*Bud 2*	*Bud 1*	*Bud 2*	*Bud 1*	*Bud 2*
Mathotiana	5.50	5.75	5.25	5.00	5.25	5.88	5.75	5.00	5.75	5.50	5.00	..
Audusson Red	5.00	5.38	5.00	5.38	5.00	6.00	5.50	4.88	5.00	..	5.00	5.00
Audusson Var.	5.50	4.88	..	5.38	6.00	5.50	5.00	..	..	5.50	..	..
Winifred Womack	4.00	4.50	5.00	4.25	4.50	3.75	4.25	4.00	4.88	3.75	3.50	3.75
Arlene Marshall	6.00	5.75	5.13	5.75	5.50	6.75	5.00	5.50	6.00	6.25	5.75	5.50
Morning Glow	3.75	4.25	5.25	4.13	4.50	4.13	3.50	3.50	4.00	4.63	4.25	3.75
Richard Nixon	5.00	5.00	5.25	6.00	5.00	5.25	5.00	5.25	5.50	5.38	5.50	5.00
Mathotiana Supreme Var.	6.25	5.75	5.88	6.00	5.50	..	6.50	5.00	5.00	5.25	6.25	6.00
Rosea Superba	5.75	5.50	6.00	5.75	5.75	5.25	5.75	5.00	5.25	6.00	5.25	5.75
Bill Rankin	4.75	4.00	4.75	4.50	4.75	4.50	4.00	4.88	5.00	4.50	4.00	5.00
Mrs. Baldwin Wood	5.00	5.00	4.75	4.50	5.50	5.50	4.75	lost	5.25	5.00	5.00	5.00
Frizzle White	5.25	5.00	6.25	5.75	5.00	6.00	4.75	5.75	5.25	4.75	5.00	5.25
Tickled Pink	5.75	6.00	5.75	6.00	6.00	5.00	5.00	5.50	5.75	6.00	5.00	6.00
Patience	5.13	4.50	5.25	4.63	5.50	4.38	3.50	5.00	5.50	4.75	4.75	5.13
Average Size:	5.14		5.24		5.25		4.92		5.21		5.02	

These results also indicate a response for earlier blooming from a second application to the same bud, although, I would not consider the differences of significance.

In TABLE II are shown the diameters in inches of the flowers from treated buds. Results similar to the response in earliness were obtained. Again, the difference between methods of application was very striking and conclusive. The comparison of two applications with a single treatment on the basis of the averages of flower diameter from the twenty-eight buds used for each treatment shows a very favorable response in size to the second application.

Certainly these results are of much interest, but there should be further testing with larger number of buds before any definite conclusions are formulated. In this particular test there was a seventeen-day period between treatments. Perhaps variations of this period between treatments and of the concentrations used may be factors in the efficiency of more than a single treatment.

—CAROLINA CAMELLIAS—

Spartanburg Camellia Show

Mr. C. A. Sherrill, director of District No. 4 writes—the Men's Camellia Society of Spartanburg will hold their fourth annual camellia show on March 11 and 12, 1967 at the Spartanburg High School Gymnasium on Du-Pre Drive in Fernwood Subdivision.

The show is held in cooperation with the American Camellia Society and sponsored by Mr. R. T. Thomason, Jr., a realtor and insurance executive who loves camellias.

There will be a Dutch Luncheon for all camellia lovers at Bailey's Cafeteria in the Pinewood Shopping Center on March 11, 1967 beginning at 12:30 p. m.

The Saturday show will be from 3:30 p. m. to 9:00 p. m. The Sunday show from 2:00 p. m. to 6:00 p. m. Admission is free. 23 silver trophies will be awarded. For information and schedules write Claude A. Sherrill, 1886 Charlotte Rd., Spartanburg, S. C. 29302 or phone 582-7425.

This show is a natural for late bloomers. Everyone is invited to attend and participate.

—CAROLINA CAMELLIAS—

In Memoriam

By H. D. PREGNALL

Mrs. Emory "Nell" Prevatt, Nell, as she was known to her many camellia friends passed away Sunday morning, January 15th, 1967.

Nell and Emory were always together where camellia lovers gathered. Nell was a charter member of the American Camellia Society and along with Emory was among the first camellia judges appointed by the ACS.

Nell was among the group who organized the South Carolina Camellia Society.

As a matter of fact Nell was really the operator of Shady Acres Nursery.

Nell did much to promote interest in camellias. Nell will be missed by her many camellia friends from all over.

A Professional Gardener Speaks

By Frederic Heutte

As a professional gardener, I perhaps look on plants, as the means to an end, where as the hobbyist or amateur takes a more rational perspective . . . to me plants were placed on this earth for two main purposes, to sustain man and for his enjoyment . . . for instance in southern Japan where many of the forests are made up in most part of the Sasanqua Camellia, thriving there for countless centuries, the wood is used as fuel in the form of processed charcoal and their seed ground and refined as a lubricant for technical instruments.

Another outlook of my profession, is that the pruning shear is the greatest tool ever invented for the gardener, and that the camellia can be its greatest benefactor, I use the term "CAN" most advisedly, because, so few among the so-called best amateur, seemingly are reluctant to use pruning shears to the best advantage.

Certainly few plants are so responsive to judicious pruning as are camellias, to the extent, that even when they have outgrown their alloted space, they can be radically cut back, to spring back in an amazing manner

as a rejuvenated specimen. My intent in this article, however, is to advise "annual pruning" as a means of keeping camellias, healthy and productive.

If you are unable to look through the super-structure of your plants so that other plants or objects on the other side of them are indiscernable, then it's about time you get your pruning shears to work, the only exception to this rule would be if you are using camellias as a hedge, but to harvest the best blooms, all of the twiggy growth within is superfluous and not conducive to quality flowers.

On the health side of the picture, you will always note that scale and other insects are the most productive when in the dark and self protected from overlaping foliage, so that these twigs and lesser of the crossing limbs should be removed as an annual chore. With this in mind, camellias will always prosper, requiring a lesser amount of fertilizer and spray . . . it stands to reason.

I like to use the analogy in reference to pruning "of feeding through the pruning shears," remember that plants are kept in balance as between roots and tops, each year adding to each, according to the dictates of man and nature, and that we are capable of throwing the balance to one or the other.

To this I hasten to add, that I am not suggesting that pruning is substitute for feeding, rather an additive, weighing more on the health side of the ledger. Pruning to me however has another seldom used benefit, in the practice of moulding plants to our own concepts, I use as an illustration one of my favorite camellia 'Dawn' of the species *vernalis,* it started out as it was intented, bush form, thinking that it was relatively a slow growing variety, it soon fooled me by cutting out a certain view in my garden, so it became a struggle between myself with the pruning shears and stubborn 'Dawn', after one of my most drastic pruning it decided to take off during the summer, by sending out several strong shoots . . . this was my clue . . . so I kept the strongest leader and let it reach for the sky, now ten years later we are both content, the leader has grown into a tree type, growing much faster than the bottom, I can see the garden beyond, besides the fact, that it is one of my most interesting conversation pieces other than the pair of 'Mathotiana' that flank my front door, for the past 18 years.

Yes, you can use your pruning shears to many advantages especially when dealing with camellias, next time there is one in your way because it has outgrown its emplacement . . . give it a second look, if not suitable to any of your artistic penchants . . . cut it back drastically and move it to another location, or maybe graft it through top-working with a variety like 'Shishi-Gashira' one of the lovely hiemalis.

So remember that as the varieties and species go out of bloom, look to each for a new expression and concepts of what the can *do for you.*

Camellia Dieback and Canker

By Luther W. Baxter, Jr.*

The flowering period of camellias during fall and winter is followed by a strong flush of new vegetative growth in early spring. The plants may have been carefully fertilized, mulched, sprayed, watered and pruned throughout the preceding year, but a few days after the spring growth begins newly developing lateral twigs wilt and darken and within a few more days the young twig is dead. Sometimes the young affected twig drops its leaves or under other conditions the dried leaves remain attached. The older the leaves at the onset of wilting the more likely they will dry and remain attached to the dead stem. Such are the symptoms of dieback and canker and such are the conditions under which the experienced grower has faced disappointments.

Dieback and canker is a fungus disease affecting many varieties of *Camellia japonica, C. Sasanqua, C. reticulata* and probably other camellia species. Within the species *C. japonica* most varieties are susceptible, but variation exists ranging from highly resistant ('Professor Sargent') to highly susceptible ('Ville de Nantes'). A few other varieties, although susceptible to artificial inoculation in the laboratory, usually escape infection by some mechanism under natural conditions ('Althea-flora'). Infection results when viable spores (reproductive bodies of the fungus) contact a newly formed wound on a susceptible camellia variety when favorable environmental conditions for the fungus exist. Fungus spores, in extremely large numbers, are produced on diseased wood (cankers) during the early spring. These are disseminated by raindrops. It should be appreciated that spore formation coincides with the new growth period of the camellia. Wounds, resulting from mowing, pruning, cultivation, insect feeding and frostcracking, or natural wounds, such as scars resulting from the falling of old leaves, provide entrance sites for the fungus. Under highly humid conditions and favorable temperature (65°-75° F.) these spores germinate and the threads of the fungus penetrate into the wood surrounding the wound and infection is thereby established. Leaf scars probably provide the most natural and abundant avenue for invasion by the fungus.

The time elapsing between invasion by the fungus and symptom expression in susceptible varieties (incubation period) varies with temperature, with the stage of development of the new shoots, and with the variety. At a temperature averaging approximately 70° F., a period of 7 to 10 days is required for symptom expression (wilting) on such susceptible varieties as 'Tomorrow', 'Donckelarii', 'Cleopatra', 'Donation', and 'Cap-

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TAIN RAWES'. If the shoots have become woody at the time infection occurs, a longer period is required for symptom expression, while with very tender shoots wilting may occur within less than 7 days.

Usually infection occurs through fresh leaf scars at the base of lateral shoots which have arisen from buds in the axis of a leaf and stem (Figure 1). Terminal shoots are occasionally affected (Figure 2); however, the incubation period for this shoot is longer than for a lateral shoot. The reason for this is due to the differences in the vascular systems servicing the two types of shoots. In a lateral shoot the vascular system is restricted to the side of the stem on which the shoot arises, while terminal growth is serviced by the entire vascular cylinder.

FIGURE 1. Leaf Scar at base of lateral stem; this stem arose from a lateral bud in the axis of stem and leaf.

FIGURE 2. Dieback of terminal shoot.

A second phase of this disease is canker formation. A canker is dead tissue on a stem surrounded by living tissue. In the dieback phase, infection kills the cells of the stem supplying the newly developing shoot and, as a result, the shoot dies. In the canker phase the fungus continues to kill surrounding cells. The surrounding cells that are not affected continue to grow. The result is the enlargement of the wood around the dead cells, giving the diseased area a depressed appearance. Usually, some lateral proliferation occurs partially compensating for the dead cells and this presents a swollen or flattened appearance. The

resulting canker assumes a somewhat elliptical sunken appearance (Figure 3).

Cankers may occur on any above ground portion of the stem. When they occur on the main trunk near the soil surface they constitute a threat to the survival of the plant. Cankers occurring higher on the main stem, above one or more lateral branches, serve as a source of spores

FIGURE 3. Camellia suffering from canker. The old leaf scar is evident near the center.

which are then disseminated by raindrops. Cankers can remain semidormant from year to year and this phase of the disease provides the survival mechanism of the organism.

The period of time that wounds remain subject to infection is usually less than a week in duration regardless of the nature of the injury. A possible exception is the injury sustained during grafting procedures. When one considers the highly humid and protected conditions provided the new graft, this is not surprising. In addition to the types of injuries previously mentioned, birds and rodents may cause injuries through which the fungus may gain entrance. It is probable that an injury sustained from any cause may constitute a portal of entry for fungus spores. One should keep in mind, however, that to have any disease development the following conditions must be met: spores of the fungus must be present; favorable environmental conditions for fungus development must exist; susceptible varieties must be available; and finally, raindrops or man's intervention for spore dissemination must exist.

Occasionally, infection of extremely tender young camellia leaves results under natural conditions but this is rare. Usually the affected leaves fall shortly after infection.

Infection results frequently during grafting procedures and this is a common cause of graft failure. Some varieties are so susceptible to dieback that incompatibility between scion and rootstock may be suspected. This is certainly true with various varieties of *Camellia reticulata* and with hybrids such as 'DONATION', particularly when grafted onto susceptible understock. It is not to be inferred that interspecific incompatibility does not exist but quick incrimination of rootstocks should be avoided.

Control of dieback and canker should be based on an understanding of the above information. When a

control procedure is thus approached it can be effective. A control program should consider the following practices:

(1) Exercise care in the selection of cuttings, scions and understocks for propagation. Cuttings selected from the terminal portions of healthy, vigorous nursery stock and rooted in clean rooting media in benches isolated from other material will result in freedom from this disease when other accepted horticultural practices are followed.

(2) Extremely susceptible varieties, with a history of known problems, should be isolated from the other varieties when propagating either by rooting or grafting.

(3) Practice dipping of cuttings and scions in a good fungicidal suspension. Submerge for 5 minutes in a suspension of a fungicide such as captan, 3 tablespoons per 1 gallon of water. In grafting procedures, dip the grafting instruments in the suspension and add a liberal quantity to the stump after top removal and stem splitting. After the scion has been prepared, but before insertion, dip again in the fungicide. Maintain cleanliness of hands and grafting instruments at all times.

(4) At the time of grafting inspect the stock for cankers. If any exist, cut well below the canker so that only healthy stock remains. If this is not possible discard the understock. This will prevent future problems. Insist on healthy understock when purchasing.

(5) If root rot is not a problem (where poor drainage and extremely poor soil are not present) use understock of either 'Professor Sargent' or 'Governor Mouton'. These varieties are highly resistant to dieback.

(6) Use seedlings as understock for more satisfactory varieties. The organism is usually not found in seed.

(7) Practice good thinning procedures to facilitate proper air drainage. This will reduce opportunities for fungus development.

(8) If space permits, do not crowd camellias either in the yard or greenhouse.

(9) Either destroy badly infected plants or practice surgery as earlier recommended. Avoid having badly diseased plants near healthy susceptible plants. Apply a good fungicide to the areas subsequent to surgery.

(10) Practice good horticultural management procedures such as fertilization, watering, pruning, spraying, mulching, transplanting, shading, etc.

(11) When exchanging scions give and accept only healthy scions.

It should be appreciated that as far as is known this fungus affects only camellia plants, although the fungus will rot various fruit such as apples. Therefore, do not be apprehensive about other diseased plants near camellias.

Camellias

By Bob Bailey
Richland County Agent, Columbia, S. C.

Take a Lesson from Nature . . .

The camellia is a slow growing tree with all the characteristics of that superior form of growth. In fact, there are many points of similarity between the camellia and the California live oak, for the two grow both as trees and as shrubs.

Their seeds not only lose vitality rapidly if not planted when fresh but also germinate very similarly, each sending out a very vigorous taproot. When the live oak is small it grows almost as symmetrically as does the camellias, although its rate of growth is somewhat more rapid. Both the camellia and the live oak are very long lived and they thrive in close proximity . . . facts indicating that many of their cultural requirements are similar, although the live oaks needs less water in summer because its roots go deeper. Poor drainage and a soggy root system are fatal to either. Live oaks and camellias go together because the oaks provide the filtered sunlight the camellia needs as well as a never ending supply of oak leaf mold, that important planting soil component that is so difficult to obtain.

Now, let us touch on the important subject of choosing a quality camellia. When you go to the nursery to select a camellia, keep this thought in mind, the health of a plant is far more important than its size. Naturally, you'll avoid plants showing the obvious symptoms of disease and insect damage and those with pallid leaves, which indicate that the plant has been overwatered, underfed or has suffered from growing in too alkaline a soil.

If you buy a balled and burlapped plant, you'll find the foliage to be an excellent indicator of the plant's health. But with plants in containers, assurance of a healthy, vigorous set of roots, is the all-important factor. Because the roots are confined within the can where you cannot see them, you must inspect the plants and their containers for signs of improper care. Here are some pointers . . . never buy a plant that's too big for its container. A camellia that towers over other plants of the same variety in the gallon-can section, is probably not a bargain. It's likely to be an old pot bound holdover. Don't forget though that different varieties of the same age will vary in size. Be wary of a plant with many roots above the soil level. This indicates probably crowding below or too forceful watering. Do not be concerned however, if one or two of the large tap roots are showing, this is actually a good sign as it indicates that the camellia is planted at the proper height in the container. (At planting time these roots should be covered with mulch.) If containers are rusted out or if the soil level is low and hard packed, chances are that the plant has spent too many seasons in the nursery. If you buy from a reputable dealer you can be quite certain of getting a quality plant.

Now that I've given you some facts on selecting a plant I shall try to

explain the best way to plant. It is a fact that you probably have spent several days shopping for or selecting a camellia and proceed to bring it home and plant it in haste. The result of careless planting, almost invariably, is an indifferent plant that will never come close to its potential. Proper planting is the most important phase of a camellia's entire life span. In connection with this, it cannot be too strongly stated that the health and vitality of your camellias are dependent on correct soil conditions as on faithful watering. It takes only a few minutes to plant a camellia correctly, if you follow a simple procedure which I shall try to give. Before you plant, it is important that you know something about the various kinds of camellias, their needs and natural environment. When you are ready to plant, consider in sequence these five factors:

Choice of location,
When to plant,
Soil mix,
Size of planting hole,
Setting the plant in place.

Choice of Location—Although there are sun-tolerant varieties, most camellias perform best when planted in partial or filtered sunlight. In our section, shade from high trees or a lath cover will mean the difference between a free blooming vigorous plant and one which may merely manage to stay alive. Try to grow camellias under conditions similar to those of their native habitat and your plants will have handsomer foliage and flowers that suffer less from the

elements. If there is no natural protection, a small plant that is set out in the open should be shielded from the sun, with temporary shelter of burlap, bamboo shades or similar materials for the first year or so, as the plant matures, the foliage becomes more dense and shades its own roots. Some of the varieties such as 'Lotus' will never adapt to full sunlight.

It should not be too difficult to find a spot in your garden where house walls, fences, hedges or plantings of larger shrubs will provide a needed protection from direct winds, heavy rains and the like. These do much damage, especially to the flowers. If there is no ready made protection you can build a simple shelter or wind screen.

Where you plant a camellia depends on the variety you are planting. Filtered sunlight is a safe bet for most varieties but some take a generous amount of sun while others prefer a shady location.

When to Plant—The best time to plant a camellia is when it is dormant. Unlike many other flowering plants which flower during the period of active root growth, the camellia blooms during its dormancy. This circumstance makes it possible for you to inspect the blooms on plants that are in flower and to select the variety that captures your fancy. Actually you can plant anytime during the dormant season, whether or not it happens to be in flower. The dormant season begins when the new wood is hardened and ends shortly after the flowering period. If you buy your camellias in cans, they can be planted just about anytime providing there isn't a radical change in environment. It is unwise to dig up a field grown plant during the period when it is putting on new growth. Never plant a camellia during the heat of the day. Wait until late afternoon or early evening. If you are in the midst of a heat spell, delay planting until the weather gets back to normal. Meanwhile keep the plant protected and well watered.

Soil—Camellias, if they are to thrive, must be planted in a humus rich growing medium that is porous and moist and always well drained. This material must be rich in organic matter and slightly acid in reaction.

Size of Planting Hole—Most camellias fail from being planted too deep than from any other cause. It is not necessary when planting a camellia to go through the trouble of digging deep into the soil. Remember, the all important feed roots grow outward, just below the surface of the ground. It is important to dig a hole that can be filled with humus rich soil to accommodate the spreading surface roots. Dig planting holes about twice the width and depth of the root ball. Refill the hole about ½ full with good soil. Tamp the soil to provide a firm base for the plant. If the roots of the plant are balled and burlapped you need not remove the burlap before setting the plant in the hole. After the plant is set, you can cut the twine around the top of the rootball and fold back or cut off exposed parts of the burlap if the plant is in a containers, cut away the side of container with metal shears and remove the

Fertilization of Camellias

By J. A. Curry, Thomasville, Ga.

Growing camellias in South Georgia for fun and pleasure also requires a little tender, loving care for your plants and this means that they must be properly fertilized at least once a year in our section. This should usually be done in March and April when it is convenient as camellia culture is a hobby with me.

For the past several years I have used a mixture of one-third good azalea-camellia commercial fertilizer, one-third cotton seed meal and one-third dehydrated sheep manure.

All of the old mulch is pulled back from the plant, then the top soil is lightly pulled back to make a bowl shape around the bush which keeps the plant from becoming planted too deep under the top soil, usually until you see a few of the roots, and a bowl is made around the bush to keep the fertilizer from washing or leaching. You then follow this up with a good application of the fertilizer mixture and the amount you spread around the bush will depend upon the size and need of the bush. After this you then replace the old mulch as well as some fresh pine straw to protect the root system and retain the moisture. This should be watered in unless you have a good shower of rain within the next few days following this application.

We are very fortunate in our section as we usually have an average rainfall of fifty-five inches per year and only one or two dry seasons during the year, which is an excellent source of nitrogen to help promote the growth of the bush.

You feel that you are well rewarded and that your labors were not in vain when you have beautiful camellia blooms during the early Fall and the cold months in the winter.

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rootball carefully. Place the plant in the hole and pack soil under the rootball until the plants sit silightly higher than it grew in the nursery. Then refill the hole with a mixture containing equal parts of good soil and organic matter. Peat moss, decayed sawdust, or muck from fresh water ponds. Press the soil firmly around the rootball and water thoroughly. After the plant has settled, its depth should be the same as it was before transplanting. Avoid planting too deep. This is the most common cause of plant failure.

Mulch—Apply a mulch after planting and maintain it continuously. Mulching reduces fluctuations in soil temperatures, conserves soil moisture and helps to prevent weeds from growing. For mulching material use granulated peat, pine needles or weathered sawdust. Apply it two to three inches deep over the root zone.

Watering—Normal rainfall ordinarily provides enough moisture for mulched camellias. During droughts, however, the plants should be watered at weekly intervals. When you water, soak the ground thoroughly.

Landscaping With Camellias

By Lucille Mellette, Aiken, S. C.

Anyone landscaping his garden can fit camellias into it but he must know how to select the right plants that will meet his needs. They are high in ornamental value as they are versatile. In choosing your plants you will want to know if they are to be used for foundation, for enclosures, espaliered, etc., or just where they will be used. Since they vary in growth habits it is well to consider how high the plant grows, how dense, how wide the spread and the color of the blooms. Not only the characteristics of the plant but that the existing conditions are satisfactory for good growth now and in the future. If you think on these things and know the cultural requirements you can have healthy plants that will add to your garden's beauty.

Since you are not growing them purely to produce blooms and since we have a wealth of varieties it is well to select the plants needed for the particular spot and to not plant more than you can care for.

Knowledge of soil requirements, exposures and drainage condition is invaluable. Select varieties to suit your various locations not just the ones you like but the ones suitable for your design. In bloom or not the plant looks well if properly planted. Don't let lack of resistance ruin the effect of your landscape. If we could see what we are doing to our gardens as others see them we wouldn't overcrowd with camellia plants. Any garden needs repetition but not to the extent of monotony of too much repetition. So many times the owners are unobservant of results and only want to add more camellias just to have them.

You can have Camellia Japonica for winter bloom and since Gibberellic Acid has come in to use you can have blooms from early fall until late spring and the sasanqua also for fall bloom.

Better understanding of design is necessary in order to improve landscaping and will make our living more pleasant. From a financial standpoint proper landscaping can increase the resale value of property. My advise to beginners is subscribe to a good camellia magazine. We have one in our "Carolina Camelias" and much information on landscaping with camellias can be found in American Camellia Society quarterlies and Yearbooks. Learn from experienced growers and be a passionate observer. Learn how the plant functions and how to treat them from reading this information. It will surprise you how much more spacious your grounds will appear if they are properly landscaped.

Camellias may be used as the dominant plant in your garden letting the foliage and flowers be the main interest. When doing this they can be planted in beds close together which will help maintenance of the plants.

When planted with other shrubs there should be good relationship between the plants. Plants that are close together will have a different form from those grown alone and as they mature their form changes.

Using camellias for hedges, formal or informal, and for screens the foliage and shape of the plants lends themselves well for this purpose. They can be left unpruned or pruned. By pruning you can have a thicker hedge but this requires more maintenance. You can hide an unattractive area of your garden or an unsightly spot that can't be changed or moved.

Where your yard is small and you want to use them for their bloom, plant them in tubs. Then they can be moved to advantageous spots—some focal area as near a picture window or near an entrance.

Against a brick wall or any garden wall where space is limited espaliered camellias are beautiful and easily trained. You may train the branches to form a fan-shape pattern or train with a single leader and have it branch at regular spacings in parallel lines or at right angles.

The more we understand landscaping the more thought we will give to characteristics of the plants we select for our garden. We will think more of the plant's foliage and nature of the plant than we will of the blooms. The short duration of time they are in bloom does not mean as much as other characteristics. It is necessary to think of its foliage, color, size of leaves, height and its relationship to the other plants.

We are all interested in color in our gardens. Some of our shrubs satisfy

us with their color but they contribute very little in overall design and appearance during the entire years. Camellias are an addition the entire year. The color of the blooms are to be considered in where they are planted as some colors clash with red brick while some do not blend with our other plantings. Your landscape will look right if it is pleasing in color, scale and form.

In using camellias for foundation planting consider the height they will become for used against some houses they grow out of scale. The plants grow to such heights that the house where they are used as foundation planting should be tall so as to be in scale. Plant far enough from house to allow for growth. Since design is not permanent your garden is not static but changes from year to year. There is no reason a house should spring from a mass of greenery. Let it look as if the ground holds it up. The trend is for fewer plant material rather than a mixture of individual widely diversified varieties. A certain amount is necessary to bring in more than one texture, but be careful that you do not use too wide a range of plants.

The heavy foundation has disappeared. More area is left around the house and heavier planting at the property lines. Use other means of relating the house to the garden than heavy planting. Shrubs should never grow over windows or crowd a doorway.

Sasanquas are trouble free shrubs and may be used in many ways as mentioned for Camellia Japonica. They grow medium to tall, many varieties, many colors and are fast growing. The foliage of the sasanqua varies from 'Dauphin' with the small leaf to the large leaf 'Day Dream'. The size of the leaf is important for one can make a garden area larger by using small leaved plants or smaller by using the large leaved material which tends to shrink space. The leaves and bold textures are good against blank walls while doorways are best accented with medium to fine textured shrubs.

Since most sasanqua blooms are single they, like the single Camellia Japonica, were not used as much in landscaping until recent years. More people are begining to see beauty in the simplicity of the single bloom. Simplicity and restraint are good principles to follow in landscaping as well as in other things. Starting to bloom in September and continuing until frost has increased their popularity. Low spreading and compact varieties have their place in the garden. The evergreen foliage makes good background material. Most varieties can be espaliered. 'Cleopatra' is a stand-by for hedges.

Plan to include camellias in your landscaping for they will be a definite asset to your garden.

—CAROLINA CAMELLIAS—

Notice Virginia Camellia Society Members

As of Jan. 1, 1967, Mr. Claude L. Angel, P. O. Box 6065, Norfolk, Va. 23508, is Sect.-Treas. of the V. C. S. Members wishing to pay dues or enroll new members direct all correspondence to Mr. Angel.

Greenhouse Fertilization In Georgia

By W. J. McCoach, Atlanta, Ga.

Six years ago I started growing Camellias, consequently I am not an authority on Camellia culture. How I handle and feed my plants is not supported, to my knowledge, by any scientific facts.

Feeding with fertilizer, how much, how often, is a very controversial subject and covers an immense area from Scotch Soot to by-products of the whaling industry. Let me say again that the following is what I do for my plants. I do not say it's right for your plants. It's the best I have found for mine.

A day or two before any dry fertilizer is applied the plants are thoroughly watered. Four to five weeks before growth starts in the Spring, dry fertilizer (Dixie Pixie) is applied at the rate of three tablespoons to a sixteen inch tub, other size containers in proportion. This feeding is repeated every month through July. Two weeks after the first application of Dixie Pixie, each container is lightly dusted with Ezminel just as you would salt an egg. To keep the root mix from becoming too acid, lime is applied in April and July at the rate of two tablespoons to a sixteen inch tub, other size containers in proportion. October, the plants get 0-14-14, two tablespoons to a sixteen inch tub. Immediately after each application of Dixie Pixie, Ezminel, lime, and 0-14-14, each container is heavily watered.

In October the plants are moved back to the greenhouse and get nothing but water until the first time the greenhouse temperature drops to 35°. After the first freeze outside, the plants are fed Ortho Gro—two tablespoons to a gallon of water. This can be repeated every two weeks. The day before the application of Ortho Gro, the plant is watered lightly and this is repeated the day after the feeding. In December, or when the buds are swollen and just about to show color, the foliage is sprayed with Ortho-Gro—two tablespoons to a gallon of water. This foliar feeding can be repeated every two weeks. When the buds develop and start to open, be careful not to get spray on the blooms. I have used Rapid Gro in place of Ortho Gro and have had satisfactory results. I always use the same product for liquid root feeding and foliar feeding.

In closing I would like to say that unless you have a fast draining root mix, your plants will not get the full benefit from your feedings.

The Role of Texture

By Mrs. Fred J. Hay, Dillon, S. C.

It is strange that texture is almost a forgotten element in flower arranging, and yet the character of plants is largely determined by the texture of their leaves and flower petals. We are told that texture is surface quality, or *touch quality*. It is that tactile property that makes us want to stroke a piece of velvet yet draw back from a thistle. Whether it is smooth or rough is determined by the many little particles that go to make up the tissue and substance of a material. If the particles are tiny, very much alike, closely and evenly spaced the texture will be smooth, but if these particles are unlike and unevenly spaced the texture will be rough. Visual impression of texture, with which we are concerned in flower arranging, has come to us through memory from having touched various surfaces and textures in the past.

Texture and color really go hand in hand. And they are both greatly affected by light. For instance, when you look at a rug of solid color, whose pile has been cut in a pattern, the latter will appear darker because of the shadow cast by the uncut part. Thus light and shadow can bring out or blot out texture, just as it often does color. The eye may pass over fine or smooth texture, but can be purposely held by an arresting or unusual texture at an important placement in a design. A landscape architect uses texture in creating interest in a beautiful garden—in walkways, plants of various leaf patterns, accent plants and the play of light and shadow upon these.

Texture is very expressive. It can attract or repel. Besides adding interest to a design it can give character. It can be used as a design tool for creating rhythm and harmony. In the early days arrangers were trained to use like textures with like textures—fine with fine, coarse with coarse. But texture, like color, can be used to achieve wonderful contrast. However, as a rule, if the contrast is very sharp or startling a transitional texture or color is needed.

Texture is thought of in connection with quality. Consider the variety of textures offered by our garden flowers. The calla lilly is like a fine kid glove, the thin poppy petal reminds us of China silk, and the zinnia of coarse homespun. Camellias and roses, aristocrats of the garden, bring to mind elegant silks and satins. We like to arrange them in fine containers and place them in handsome and elegant rooms, and yet we know that they are also beautiful with driftwood and in simple ceramics. We arrangers should become more alert to and aware of the great potential of textures and how to combine them in our designs of today.

Greenhouse Gab

By HARRY SMITH, Greensboro, N. C.

One thing most every greenhouse grower of camellias works for is the oversize bloom. We are willing to try almost anything we hear of, even to the point of risking some of our plants to achieve this result.

To attain year round joy and satisfaction in blooms, I have a bit of "this" and a little of "that" in my house. I should say my house, for my wife is partner with me in the job and joy of growing and blooming plants. Camellias are, of course, our main interest. Many can grow them better than us, but no one can love them more. Well, to get back to the subject, diversification led me to orchids and this led me to a study of orchid procedures which I believe has been beneficial in growing camellias for there seems to be a marked similarity in the culture. This is what one orchid grower has said about the growing media.

"A vigorous and healthy root system is the first step toward insuring maximum growth and a favorable nutrient supply. The ideal growing medium will provide a high degree of porosity to insure adequate oxygen for root respiration. Water should drain freely through the medium, and it should be resistant to rapid decomposition and decay. A soggy condition created by a decomposed or 'tight' medium will reduce aeration and enhance the possibility of root rot". Most of these principles seem to apply also to camellias, for I have had experiences with root rot.

Once one has arrived at the media that will accomplish these objectives, and there are many, the next step is to find an effective nutrient to use with this media, as most likely such a media will contain very little in the way of nutrients.

Mineral nutrients can perhaps be supplied most efficiently and effectively in liquid form. Very few camellia growers will use the same nutrients or methods of application and very likely will vary their methods from season to season and year to year. Personally, I am not a bit consistent and vary the foods given my plants, hoping that I will be able to give them everything they may need. This is a rather haphazard practice, I suppose, but maybe others are guilty, too. Overall, my objective is to supply nutrients in a ratio of 3-1-2 plus essential minerals.

In late March or April my plants are fed a well-known camellia food, a slow acting, long lasting food. This is supplemented almost every month with liquid applications of Rapid Gro or Ortho-Gro, with the exception of July, August and September when it seems desirable that growth should be slowed and bloom buds initiated. Feedings are resumed when buds begin to swell and it seems this may be the crucial point in getting the oversize bloom. These feedings are accompanied by frequent waterings. Many believe that liquid manure with blood meal, cottonseed meal or fish meal very helpful at this stage. Actu-

ally any good food, plus plenty of water should accomplish the objective within eighteen to twenty-four hours under good conditions. If the blooms continue to grow after they are open and increase in size one feels that the result is worth the effort, and truly things are looking rosy!

— CAROLINA CAMELLIAS —

Things To Do

By Russell Mellette, Aiken, S. C.

March and April

1. Remove old mulch, fertilize and put down new mulch.

2. Fertilize at the end of the flowering season using minor elements along with Camellia and Azalea fertilizer. Use ½ cup Camellia and Azalea fertilizer and one tablespoon of minor elements per foot of upright growth.

3. Spray for Camellia scale, Tea scale, Peony scale, Florida Wax scale and other insects. Use Florida Volck and Isatox when temperature is between 45° and 90° or use Cygon which is a systemic insecticide.

4. Continue prunning.

5. When grafting use healthy understock.

6. Exhibit flowers.

May and June

1. Make second application of fertilizer. This should be about six weeks later than first application.

2. Watch plants for insects and spray, if necessary.

3. Water during dry periods at least twice a week making sure a thorough job has been done.

4. If leaf gall occurs, pick off and destroy.

5. Check grafts and replace those that did not take.

July and August

1. Check Camellias for scale and use Cygon, if needed.

2. Water during dry periods, doing a thorough job two to three times a week. This is a critical period in the development of flower buds. Late afternoon is the best time to water provided the foliage dries before night.

3. Try Gibbing on early blooming varieties.

September and October

1. Most Gibbing is done during these two months.

2. Fertilize with low nitrogen fertilizer.

3. Spray for scale insects.

4. Water if necessary.

Charleston Spring Show and Beef Daube

Everyone attending the Drop-In at the home of the president of the College of Charleston, Dr. Coppedge, was served Charleston Hospitality in generous amounts. All left singing the praises, and wanting the recipe of an unusually delicious dish called *Beef Daube.*

Mr. Willard Silcox kindly secured the recipe from Mrs. Olin W. Patrick of the College of Charleston Cafeteria for *Carolina Camellias.*

In the past *Carolina Camellias* has given recipes for a Soil Mix—for plant food and sprays. This is our first venture in eating food—

BEEF DAUBE

6 lbs. beef—round
1 cup vinegar
2 cloves garlic
1 tablespoon shrimp and crab boil spices
4 pieces celery
1 carrot
1 large onion
6 or 8 tablespoon Worcestershire sauce
1 tablespoon monosodium glutamate
¼ cup cooking sherry
salt and pepper
plain gelatin

Salt and pepper beef and place in pan, pour vinegar over meat and marinate overnight in refrigerator. Turn beef several times to allow vinegar to cover all parts of the meat.

In large pot, cover beef with water, add spices, celery, onion, garlic and carrot. Cook until meat can be torn apart with fork (add extra water as needed). Remove meat and set aside to cool. Strain stock and skim off all excess fat. Season this stock with the worcestershire, monosodium glutamate and sherry. To each pint of seasoned stock use one tablespoon of gelatin. When meat has cooled enough to handle, shred in small pieces and place in mold. Pour the seasoned stock to which the gelatin has been added over the shredded beef. Cover the beef completely. Place in refrigerator until time to serve. Allow approximately 4 hours to congeal. Unmold by running warm water over the outside of the mold. Serves 30 to 40.

RIPTIDE
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FALL OF 1967

Greenhouse Protected Plants and Scions

List of 1 Yr. Grafts

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Cresta Blanca
Coral Queen
Charlean
Coed
Charlie Bettes
Carter's Sunburst
Diddy's Pink Organdie
Dan Graves
Elegans Supreme
Erin Farmer
Fortune Teller
Gus Menard
Georgia Rouse
Grandeur
Guilio Nuccio Fimbriated
Howard Asper Sol. and Var.
[illegible] Porter
Julia Hamiter
Judy Matthews
Julia France
Lady Velma
Lieut. Bennie Folsom
Mary Paige
Magic City
Moonlight Sonata
Marguerite Cannon
One Alone
Pink Magic
Tomorrow Park Hill
Tomorrow Leanne's

[redacted]

An Invitation to Join

SOUTH CAROLINA CAMELLIA SOCIETY

The South Carolina Camellia Society is one of the largest, most active, horticultural and hobby state organizations in America. The Society is a non-profit organization.

The purpose of the Society is to:

1. Stimulate and extend appreciation of Camellias.
2. Encourage and promote the science and art of Camellia culture.
3. Develop, acquire, and disseminate information concerning the Camellia and its origins, history and culture.
4. Seek the aid and cooperation of and to work with Clemson University, the American Camellia Society, the State of S. C., the S. C. Association of Nurserymen and Municipal authorities in the promotion of the purposes of the Society.
5. Promote, sponsor, and supervise state-wide Camellia shows in cooperation with the American Camellia Society, with amateurs, professionals, and nurseries participation with emphasis on horticulture and individual flowers.
6. Publish and distribute a magazine to its members.

Membership which runs with the Calendar year, January 1 through December 31, entitles you to three issues of "CAROLINA CAMELLIAS", issued usually in January, March, and October, which has more regular features, authentic feature articles on Grafting, Planting, Feeding, Gardens, Sasasquas, Judging, Pruning, Arrangement, Disbudding, Diseases, Spraying, and Mulching, to mention a few. Also, there are photographs and other types of illustrations.

The South Carolina Camellia Society will welcome [illegible]
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HARDWOOD BARK MULCH AND SOIL CONDITIONER

Replace 50 to 100% of Peat

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CERTIFICATE OF ANALYSIS

	Percent
Moisture	11.00
Nitrogen	0.41
Equiv. to Ammonia	0.50
Available Phosphoric Acid	0.00
Insoluble Phosphoric Acid	0.05
Total Phosphoric Acid	0.05
Equiv. to Bone Phosphate of Lime	
Potash (K_2O) (Available)	0.00
Free Phosphoric Acid (P_2O_5)	

pH of Water Slurry 4.5

HARDWOOD BARK ANALYSIS

CERTIFICATE OF ANALYSIS

	Percent
Moisture	18.00
Nitrogen	0.53
Equiv. to Ammonia	0.65
Available Phosphoric Acid	0.00
Insoluble Phosphoric Acid	0.10
Total Phosphoric Acid	0.10
Equiv. to Bone Phosphate of Lime	
Potash (K_2O)	0.70
Free Phosphoric Acid (P_2O_5)	

pH 3.5

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