Carolina Camellias

Camellia Hybrid Dorothy James

Published for the Members of
THE NORTH & SOUTH CAROLINA and VIRGINIA CAMELLIA SOCIETIES

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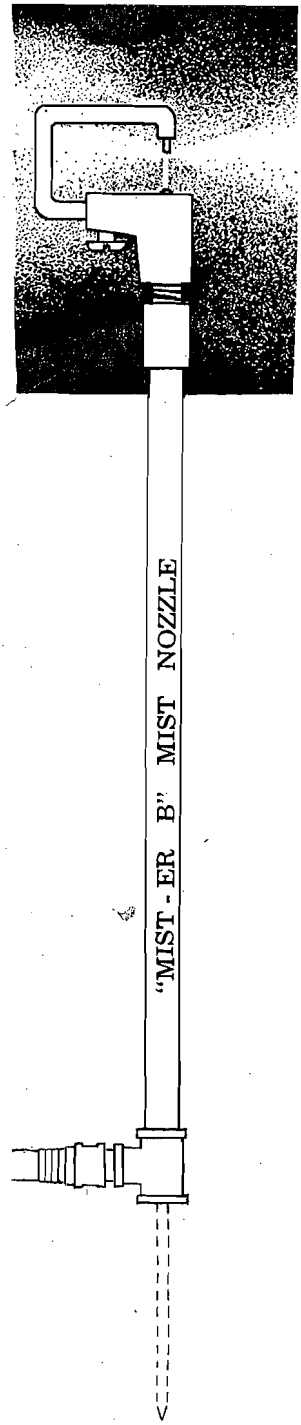

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Carolina Camellias

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JOHN H. MARSHALL, 581 Lakeside Dr., Rock Hill, S. C., Editor

In This Issue

FEATURE ARTICLES

REGULAR FEATURES

About the Cover

This issues cover features DOROTHY JAMES which won best seedling (hybrid, Japonica, reticulata) of the Sacramento Camellia Society Show March 3, 1962 and also the American Camellia Society COMMENDED SEEDLING AWARD at the same show. Courtesy James Rare Plant Nursery, Aptos, Calif.

President's Page

It is truly a pleasure and a privilege to speak to each and every member of the South Carolina Camellia Society through this column.

Your society is off to a good start for 1962. Your continued support will make for a better society.

The weather has been real camellia weather. The camellia shows have been better than ever. Outside blooms are the real show-stoppers this season. Our South Carolina Camellia Society luncheon at the Francis Marion Hotel in Charleston on February 24, 1962 was successful beyond our greatest expectations. Members of the SCCS from throughout the Camellia Belt as far north as New Jersey and Pennsylvania were present.

Mr. and Mrs. William Quattlebaum, Mr. H. E. Ashby, and our only Lady Director Mrs. F. C. Ott did a wonderful job preparing for the luncheon and musical program. Many thanks to each of them.

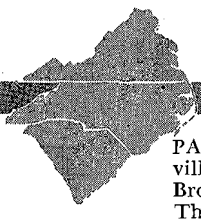
The luncheon in Greenville on March 3 1962 under the direction of Dr. D. M. Rivers was a happy reunion of many camellia lovers. The panel discussion conducted by Dr. Rivers was both interesting and entertaining. One of the objectives of our SCCS is to promote felowship among camellia enthusiasts. The Charleston and Greenville Luncheons were tops in fellowship. Our third Fellowship meeting will be in the Fall along with the annual meeting.

The editorial content and the format of our publication, Carolina Camellias, reached a new peak in the last issue. Everyone is praising the January edition.

When you receive this message the camellia show season for this winter will be nearing its close. It will be time to think of spring care for your plants such as spraying and feeding. Give your plants good spring care, plenty of water during the summer and you will be well rewarded next season with many fine blooms.

For all the fine members and their interest I am grateful.

Carroll T. Moon
President



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YELLOW CAMELLIA FOUND IN GEORGIA

The long hoped for color break through in camellias has now happened. There is now a yellow Camellia.

This is not an artificially colored camellia such as was discussed under the "What's New" section of the last issue of the Bulletin but is a naturally yellow camellia.

Dave Strother, of Fort Valley, Ga., reported to a group of camellia growers in Charlotte, N. C. that he saw this yellow camellia on March 10, 1962 and at that time plant had 15 yellow blooms on it. Mr. Strother stated that it is a true yellow and not just a reflection of yellow from the stamen. Even the bud is yellow when it first starts opening.

Seedling

This yellow camellia is a chance seedling of Mrs. M. J. (Lilette) Whitman of Macon, Ga. Although this is the second year this seedling has bloomed Mr. and Mrs. Whitman wanted to see it bloom the second year to be sure it was blooming true.

Up until this time there have only been two basic colors in camellias—white and red. These two basic colors have given us all the beautiful reds pinks and various shades of these colors, plus the variegated flowers that we now have.

It is difficult to comprehend what may be done with yellow as a basic color in camellias. With a yellow base such possibilities as cream, lemon, orange, peach, gold, coral, vermilion and scarlet bring promise of fantastic new color combinations.

All of these exciting possibilites may become reality before to long because it is understood that Mr. and Mrs. Whitman will hold this seedling for another year after which time they plan to give it to the "Camellia Research Advsory Committee."

Main Project

Working with a yellow camellia is one of the main projects of this Research Committee which is composed of some of the most skilled scientists in the country. The use of pollen from this new yellow camellia may put them years ahead in their projected schedule of developing new colors.

The entire camellia world will be indebted to Mr. and Mrs. Whitman for making this yellow camellia available to this scientifc organzaition and it is felt that colors and blooms undreamed of at this time will be seen in the camellia world within the next 10 years.

Pines Planted Symmetrically in Rows Make Ideal Cover For Plants at Laurel Lakes Gardens and Nursery

FERTILIZING PROGRAM DEVELOPED IN COOPERATIVE STUDY

By John H. Marshall
Rock Hill, S. C.

SALEMBURG, N. C.—The heart always beats a little faster as you approach a Camellia Garden—and when it also happens to be a Nursery—it practically pounds in anticipation.

Such was the case today when I visited Laurel Lakes Gardens and Nursery near Salemburg, 22 miles East of Fayetteville, N.C. on Highway 242.

After a stroll along more than three miles of Camellias, Azaleas, and Holly Trails, my notes showed the following entries:

Beautifully pruned Slash Pines, planted symmetrically in rows 8 feet apart make ideal cover for

growing Camellias, etc.

About three-quarter million ornamental plants including 80,000 Camellias and Sasanquas (over 850 varieties).

Completely Irrigated

Complete irrigation system operated from nearby lake by a timing device.

Exceptionally healthy plants well budded; many blooms and lush green growth (be sure to discuss fertilizing program).

Pine grove located near home surrounded by hollies and sasanquas forms cover for propagating beds, growing beds, potting mixtures and sterilizing soil.

Later we sat talking with J. Stewart Howard who founded the gardens back in 1950 after ill health had brought about his retirement from a job with Chilean Nitrate Sales Corporation and who now directs the operation of Garden and Nursery with the assistance of his wife, Mary; daughter Elizabeth; son-in-law W. J. Freeman. Jr. and daughter, Jane (Mrs. Price).

Feeding Program

My eyes scanned the notes I had made while touring the garden and nursery. "With the feeding season just ahead, I think the readers of CAROLINA CAMELLIAS would like to know about your fertilizing program," I stated.

Mr. Howard settled back comfortably and started slowly as his eyes drifted out the window across the garden.

"We do not claim it is the best to be had," he said. "From the limited research conducted to date with fertilizing camellias and from our tests and observations the program is the best we know to follow at present. With the stepped up research now going on at N. C. State College a better program may emerge.

Safe and Simple

"The program we are following is safe, simple, and easy to follow. Time and labor saving, it is getting very satisfactory results.

"However," Mr. Howard added, "I am not trying to influence anyone to adopt my feeding program. If they are satisfied with their present program — **THEY SHOULDN'T CHANGE.**"

"On the other hand", he continued, "if they are not getting the desired results from their present practices it is our hope they may find some suggestion in our program that will help."

At this point, we broke in by asking, "How did you first arrive at the program you are presently utilizing?"

Outgrowth Of Experiment

"Our present program of fertilizing is the outgrowth of a three-way cooperative study started in 1957 here at the gardens with N. C. State College, the DuPont Company and Laurel Lake Nurseries

On Left, J. Stewart Howard, Discusses Feeding Program with Editor

participating in the experiment.

"The nursery provided a total of 40,000 plants with all the needed facilities including irrigation and pesticidal programs. The experimental design, measurement, and evaluation were made by the staff of the College, with electronic equipment to speed the data processing. DuPont provided the fertilizer compounds used as well as a research grant.

A report of the experiment showed the study was designed to determine the effects of ureaform nitrogen fertilizer ornamental plants. Since ureaform is slowly soluble in water, making nitrogen available through a slow process of hydrolyzation, it provides a "controlled" rate of fertilization for plants as contrasted to water soluble urea.

Preliminary Results

Preliminary results show the controlled nitrogen helps create hardier plants, more able to resist winter damage. Plants are of better general quality, larger and more compact.

During the study, plots were laid out early in 1957 with Japanese dwarf hollies and Chinese hollies, as well as azaleas and camellias. Four levels of supplemental nitrogen were applied: 50, 100 150 and 200 pounds per acre. Four sources were used: ammonium nitrate; sodium nitrate; "NuGreen" fertilizer compound containing 45 percent nitrogen; and DuPont "Uramite" fertilizer compound, with 38 percent nitrogen.

Fed Once

The soluble fertilizers were applied four times on each plot, the "Uramite" only once in April. Adequate phosphorus and potash were supplied in applications of 1000 pounds of 5-10-10 in April and June. Results are summarized in the table given below.

Preliminary Data on Japanese Holly (Ilex crenata var. conuexa), 1957, with varying rates of supplemental nitrogen from "Uramite" fertilizer compound and a soluble source of nitrogen.

	"Uramite" lbs. N/acre				ammonium nitrate lbs. N/acre			
Plant size	50	100	150	200	50	100	150	200
height (inches)	12.65	11.35	13.45	13.40	9.95	9.70	9.90	11.15
diameter (inches)	15.15	13.50	15.70	15.85	13.35	12.95	12.65	14.15
*Winter color	—	†	†	†	—	—	—	†
*Winter hardines	†	†	†	—	—	—	—	—
*Plant uniformity	†	†	†	†	—	†	†	—

**Data are summaries of subjective evaluations; (†) indicates satisfactory and (—) indicates unsatisfactory performance.*

After reviewing the above report, Mr. Howard commented, "We are now using Uramite on everything we grow with good results."

Feeding Mixture

"Our present fertilizer program, which resulted from the study and other tests and observations, calls for a mixture of the following:

3 lbs. Uramite (38% nitrogen)
3 lbs. Superphosphate (18 or 20%)
7-½ lbs. Delomitic Limestone
8 oz. Sulphate of Potash
8 oz Chilean Nitrate of Potash

"It is applied to sterilized soil in the cold frames at the rate of 10 pounds to each 100 square feet and mixed well with the top six inches of soil and thoroughly soaked with water just prior to, and immediately after, transfer of rooted cuttings from the rooting beds.

"The following summer when plants are transferred from the cold frames to gallon cans, the soil is sterilized and then mixed with sterile peat moss 48 hours later. To each cubic yard of this mix a complete batch of the above fertilizer mix is added.

Check PH

"The amount of fertilizer mixed with the soil at the time the plants are planted in cans (about June 15) will be sufficient to give the desired growth without adding any more until June the following year, at which time we have the soil checked for the pH level.

"At this time, we apply the same formula at the rate of one tablespoonful per can. If the pH level is 5:15 or above we omit the limestone and reduce the amount per can to one rounded teaspoonful.

"The fertilizer is spread evenly over the surface and watered immediately. The cans are also watered the day before the fertilizer is applied. This application has been sufficient to carry the plants through the second year.

Camellia Lovers Stroll Through Pine Covered Gardens

Outside Plants

For Camellias planted in the open ground we dig a hole at least three times as wide as the root ball. The soil mixture for backfilling the hole consists of equal parts by volume of sandy top soil and sphagnum peat moss. To this mixture is added one third (⅓) cup of an 8-8-8 neutral fertilizer plus one tablespoon of Uramite for each foot in height of plant and mixed well before backfilling the hole. Each year thereafter one third (⅓) cup of an 8-8-8 neutral fertilizer and one tablespoon of Uramite is applied in a wide band around the plant at the outer edge of the branches for each foot in height of plant in March. The above fertilizer application is repeated from May 15 to June 1. The soil should be thoroughly saturated before and after each application of fertilizer.

1-1-1 Ratio

"When we first started growing camellias we used a fertilizer ratio of 1 unit of nitrogen, 2 units of

phosphorus and 2 units of potash. Two years ago, we switched to a 1-1-1 ratio. In the open ground we are now using an 8-8-8 mixed fertilizer plus enough uramite to bring the total fertilizer applied to a 2-1-1 ratio. We are convinced that nitrogen is the most important element in the growth of camellias and most evergreen ornamentals and that organic forms such as uramite that break down slowly and release the nitrogen over a period of several months are safer to use and give better results than the water soluble forms that release all their nitrogen in a comparatively short time. The use of slow organics makes it unnecessary to make frequent applications during the growing season and greatly minimizes the danger of excess ammonia and soluble salts harmful to camellias and especially those grown in containers. We have also found that slow acting organics such as uramite that release nitrogen into the late fall help plants to withstand severe freezes better than those that approached winter with all the nitrogen in the soil used up.

Caution

"A high level of phosphorus in camellia soils is conducive to iron chloresis. High rates of phosphorus such as 10-20-10 cannot be justified as it ties up iron as insoluble sulphates.

"All sources of potash in common use are completely water soluble and must be used with care to avoid an excess of soluble salts. We prefer sulphate of potash of the readily available sources. Glass frits and potassium frit are being tried experimentally and as sources of potash should be a much safer source when they are available commercially.

Special report to camellia growers
from Du Pont research

camellia petal blight

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For Camellias:

pH LEVEL DEPENDS ON OTHER FACTORS

For many years "soil acidity" and "pH level for Camellias" have been popular topics of conversation whenever and where ever Camellia lovers gathered.

As a result, there have been many experiments, by individual growers, of one nature or another, and the results have been passed along from one grower to another and from one section of the Camellia Belt to another.

Most discussions and efforts have been directed to finding or trying to pinpoint one specific pH figure that would hold for the growing of Camellias under any condition and in all locations.

Frankly, we feel that we have been placing the emphasis in the wrong direction. Camellias have long demonstrated that they will tolerate a wide range of pH level—therefore, the most important factor is: what is the best pH level for growing Camellias in certain type soils and certain weather conditions.

A book published in 1958 entitled, "CAMELLIA CULTURE," includes a chapter written by Dr. Milton Freeman, Extension Soil Specialist, University of California (pages 321-322) which states, in part:

pH Scale

Most soils in high rain-fall areas are acid or "sour" as a result of the loss of basic elements such as calcium, magnesium, and potassium through leaching. In low-rainfall areas where there has been little leaching, soils are usually alkaline or "sweet." The degree of acidity or alkalinity of a soil or water is conveniently expressed in terms of pH values. The pH scale is divided into 14 divisions numbered from 1 to 14. Soils with a pH value of 7.0 are neutral. Soils with pH values above 7 are alkaline or "sweet," while those below 7 are acid or "sour." pH is defined that a pH of 5.0 is 10 times more acid than a pH of 6.0, and pH of 4.0 is 10 times more acid than a pH of 5. Thus a soil having a pH value of 4 is 100 times as acid as one with a pH of 6.

Soil pH is one of the factors that affect the growth of plants. For each plant species there is generally a range of pH values over which plant gowth is best, all other conditions being the same. Some plants grow best in alkaline conditions, while others grow best under acid conditions. Some grow well over a wide range of pH values, while others do well only over a narrow range of acidity or alkalinity.

Wide Range

It is generally assumed that the Camellia is an acid-loving pant and grows best under moderately acid soil conditions. Recent work by Bonner and Honda at the California Institute of

Technology led them to the conclusions that" . . . **the camellia appears to be relatively insensitive to soil or nutrient acidity over a wide range. It appears justifiable to conclude that over the pH range of 5 to 7, growth of the camellia is not greatly affected by variations in pH. Even at pH levels as high as 9, good growth may still take place,** under the conditions obtaining in these experiments." It is exceedingly important to note the last phrase because (1) the plants were not grown in soil, and (2) under the conditions of the experiment the plants were very much better supplied with essential nutrients than is generally possible in soils. It may be concluded, however, that the camellia can be grown under a wide range of pH values provided the plant, at the same time, can be furnished with an adequate supply of nutrient elements.

Slightly Acid

From the practical standpoint, it must be admitted that it is much easier and cheaper to provide an adequate supply of nutrients to a camellia growing in an acid soil than one growing in an alkaline soil. Hence, most camellia soils are usually kept slightly acid. Depending on the soil and its resistance to a change in pH (buffer capacity,) it can be kept acid by the use of (1) acid peat moss, (2) acid leaf mold, (3) acid-type fertilizers, (4) sulfur, (5) ferric sulfate ,(6) alum, or other acidifiers. For example, 4 to 8 ounces of alum, or 1 to 2 ounces of sulfur is generally sufficient to acidify a square yard of soil.

(Editor's Notes CAMELLIA CULTURE has 55 contributing au-

thors, who are numbered among the nation's leading Camellia growers and desearchers. It was prepared for the Southern California Camellia Society under the editorship of E. C. Tourpe and provides the latest scientific information on Camellias. Carolina Camellias recommend it most highly to every camellia grower).

Howard Gives Views

It is also significant that J. S. Howard of Laurel Lake Gardens and Nursery, at Salemburg, N. C., one of the largest and most successful propagators and growers of Camellias, Azaleas, Hollies, and other evergreens in the Eastern Camellia Belt, and who recently participated in a three-way research experiment with DuPont and N. C. State College on certain fertilizing practices, had this to say in a recent talk before the members of the Potomac Valley Camellia Society:

"Camellias seem to be fairly tolerant of a rather wide range of pH level in soils. The optimum level seems to be from 5.15 to 6.5. The pH level of the soil is very important because it controls the availability of most plant nutrients and should be tested regularly. When the pH level goes below 5, Camellias and most evergreen plants suffer from Phosphorus and Magnesium deficiency. When the pH goes above 6.5, the plants are likely to suffer from a deficiency of Iron and Manganese."

Feeding Practices

In further discussing his feeding practices, Mr. Howard stated he used Uranite, Superphosphate, Sulphate of potash and Dolomitic Limestone normally. However, if tests showed the pH level 5.15 or above, he omitted the limestone.

So it would appear that Camellias can be grown under a wide range of pH values, depending upon an adeqquate supply of essential food elements available.

Conditions Variable

And, if that conclusion is sound, then wouldn't it be reasonable to assume that the most favorable pH conditions are variable, depending upon the type of soil used. For instance: the best pH level for loose sandy-type soil is not necessarily the best or most favorable pH for a clay type soil due to their reactions to fertilizing, watering, aeration and supply of nutrient elements, readily available.

In that case, the pH for Charleston's low country sandy loam is not necessarily the best pH for Charlotte's piedmont clay soil.

All of which brings us to one final conclusion — why be half safe — contact your county agent or some qualified soil tester.

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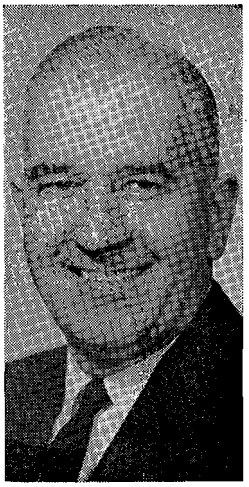
FOLIAR FEEDING HIGHLY EFFICIENT

By
Mansfield Latimer
Rock Hill, S. C.



Man continues to learn. Many things that man believed in the past have proven to be untrue and many things that man did not believe possible or doubted in the past have now been proven to be true.

At one time man believed, and the textbooks taught, that leaves were covered with a cutice impervious to water but now test have proven that the leaf is a beautiful mechanism for absorption and the textbooks are having to be rewritten.

Experiments with radioactive isotopes supplied by the Atomic Energy Commission and the use of radioactive tracing techniques by scientists have made possible new breakthroughs in our knowledge of the universe.

PLANT NUTRITION

Some of the most promising developments are in the field of plant nutrition. We now know that the leaves have an absorption mechanism which functions much like a blotter in actually drawing material into the plant. In fact, it has been established that not only can plants absorb nutrients through the roots but also through the foliage, the fruit, the twigs, the trunk, and even the flowers.

Dr. H. B. Tukey, head of the department of horticulture at Michigan State College, discussed before a subcommittee of Congress the uses and application of atomic energy and especially radiosotopes in the field of agricuture.

Dr. Tukey stated that radiosotopes had been a great help in the study of absorption of nutrients through the foliage of plants. He told of many things that had been learned in this connection. While some of these things may not apply to foliar feeding of camellias many of them do and some of the other facts developed pose some questions that will be challenging to camellia growers who love to experiment.

Leaf Is Efficient

The following are some of the facts developed from these studies:

1. That not only can plants absorb nutrients through the roots, but also through the foliage, the fruit, the twigs, the trunk, and even the flowers.

2. That the leaf is a very efficient organ of absorption. That the materials move into the upper surface of the leaf as well as the lower surface. That it enters at night as well as during the day.

3. That the foliar area for feeding is larger than the ground area. For example, the ground area covered by the roots of an apple tree was one-hundredth of an acre while the leaf surface of the same tree was one-tenth of an acre so the leaf area was ten times as large as the ground area.

4. That, while the amount applied to leaves may seem relatively small, the efficiency is high. In fact it is the most efficient method of applying fertilizer to plants that has yet been discovered. When material is applied to the leaves in soluble forms, as much as 95 percent of what is applied may be used by the plant. When a similar amount is applied to the soil only about 10 percent of it is used. Therefore foliar feeding is 9½ times as efficient.

Leaf Area Larger

5. That, even in midwinter and at below freezing temperatures, the material will move through the branches and twigs and that the material tends to accumulate near the bud. The twig and branch area of a plant is quite large. For example the surface area of the twigs, branches, and trunk of a 25-year-old apple tree, when cut down and measured, proved to be 800 square feet, which of course would be equivalent to a surface 100 feet long and 8 feet high — much larger than the ground area of the same tree.

6. That plant food and insecticide can be applied in the same application.

7. That we now have new material available which are ideally suited to spray application. Instead of limestone, bonemeal, raw rock phosphate, and that sort of thing, we now have fertilizers which are completely soluble in water, such as urea, which carries up to 40 percent of nitrogen, othophophoric acid, and so on.

Critical Periods

8. That there are critical times in the development of a plant when nutrients should be applied. At other times they should be withheld. A cherry fruit, for example, does not just swell up as it grows. The cherry grows for a certain period of time and then stops for several weeks. In the period of time when the cherry is apparently not growing, the pit is hardening. Inside the pit the embryo is growing at still a different time. And so at one time one part needs magnesium, another needs phosphorus, and so on.

Is it possible that something similar to this takes place in the development of a camellia bud and flower? We know that buds grow

and then stop growing and then start growing again. What is taking place when they appear to be standing still? Do they have different nutrient requirements at different stages of growth? If so what are they? How much? When do they need them?

9. That the fact that certain parts of the plants need certain nutrients at certain times cause a drain on the plant if these nutrients are not supplied when needed. For example when a seed is forming in a strawberry the phosphorus concentrates immediately in the seed. In the case of the apple both phosphorus and magnesium concentrate in the seed when it is developing. This is a very interesting point to fruit growers, because they have noticed the magnesium deficiency appears in the foliage in the summer. This is when the seed is drawing magnesium from the leaves, when the supply is short, and so magnesium deficiency shows up in the foliage.

Special Requirements

It is the same as the old saying that a mother loses a tooth for every child since the calcium needed to form the bones of the unborn child is taken from the mother. We have learned to provide the expectant mother with extra food during a pregnancy. It is logical to suppose that since a plant is going through a similar experience during the formation of a flower and seed that it also has special requirements during this time and if it does not receive this extra food it will have to furnish it from its own system and thus suffer because of the deficiency. Further, without an adequate supply of the proper nutrient at the proper time, it is logical to expect the bloom and fruit to be inferior.

Perhaps some of our most successful greenhouse growers of giant camellia blooms have had the answer all along with their regular schedule of feeding during the blooming season. The only question is, which of the various secret feeding formulas is best.

Locked in Soil

10. That there are conditions under which the soil may lock up certain materials so that, although they are present in the soil, they are not available to the plant. Under conditions such as this the leaf application is very effective.

11. That there is a possibility that a foliar feed just prior to shipment of a plant, especially barefooted plants, would be most helpful in helping them survive shipment. This might apply to all types of perennial plants and nursery stock in general.

12. That since materials move **into** the leaf there is a good possibility that they may move **out** of the leaf as well. In some locations, where certain fruits do not set well, the explanation has been made on the basis of adverse temperatures and perhaps sunlight. Some scientist are now highy suspicious that here may be a case where materials are actually being leached out of the leaves, maybe by overhead irrigation, maybe by rain, maybe by other factors. More study is needed on this problem.

All of the above information opens unlimited possibilities to the grower of camellias. Certainly the camellia grower can foliar feed his camellias if only as a supplement to his regular feeding program.

Consider all the possibilities mentioned above and do some experimenting. Perhaps you have already had some experience along this line. If so, your editor would like to hear from you. Perhaps other growers can benefit by your experience.

STITCH IN TIME SAVES NINE

There is an old saying that a "stitch in time saves nine". This is certainly true when applied to spraying your camellias. It is a lot easier to control scale and prevent it than it is to get rid of it if it once gets a strong foothold in your garden.

Tea scale is probably the most prevalent and persistent pest camellia growers encounter. No matter how careful you are in examining plants to be purchased, scions to be grafted ,or cuttings to be rooted, tea scale will eventually put in its appearance. Fortunately, it is not too difficult to control, provided you follow a regular schedule of spraying.

Easily Recognized

It is easily recognized, but unless you examine your camellia foliage closely the first symptoms of tea scale you notice will be yellowish blotches on the upper surfaces of the leaves. Upon turning these leaves over, you will find the underside covered with a white cottony mass. Under the white, web-like mass are tiny brown scales which are actually half shells attached to the leaves and under which are the female insects.

Scales are sucking insects, and it is the withdrawal of chlorophyll which produces the yellow splotching. Heavy infectation causes premature leaf-dropping and generally unhealthy-appearing plants.

Tea scale rarely appears on the upper sides of leaves except in a particularly dense area of a compact plant where there is little light and ventilation. This is one of the reasons that it is important to prune your plants and cut out this dense interior growth so light and air can come in and so when you spray the material can reach all of the foliage.

Contact Spray

For the average grower the most pratical control method is the use of a contact spray of an emulsified petroleum oil. There are several reliable brands on the market. Perhaps the most commonly used is Florida Volck. Used in concentrations recommended by the manufacturer, these sprays are generally effective. The addition of nicotine sulphate provides an effective spray for lace flies on azaleas.

It is also possible to "kill two birds with one stone" since you can mix a liquid fertilizer with your spray solution and give your plants a feeding at the same time you are spraying them.

The properly diluted oil can be applied by the use of a 1 to 3 gallon hand-pumped pressure sprayer.

Pressure should be kept reasonably high and the nozzel adjusted so that the solution is emitted in a fine spray.

Cover All Scales

Care should be exercised to ensure covering of entire plant surface, particularly the underside of the foliage. The effectiveness is dependent upon a film of the spray covering all scales so that complete penetration and suffocation can ensure a complete kill.

Oil sprays should not be applied during extreme cold or hot periods (when it is likely to freeze or when the temperature is likely to exceed 90 degrees).

A spring application in April or May, in a concentration of 16 tablespoons of oil to 3 gallons of water, will provide adequate control. In heavy infestations, a repeat spring spraying and a fall (September) application may be necessary to bring about initial control. Thereafter, a spring application should be sufficient. As a rule, oil sprays should not be applied more often than twice a year.

Wash Leaves

Occasionally you may have only one or two plants with scale or you may have just bought a new plants that has some scale on it. If this happens in the summer or winter when you can't spray you can take a little warm soapy water and carefully wash the leaves. Aside from the fact that your neighbors may think you are crazy if they see you giving your camellias a bath this is a very effective way of controlling a bad case of scale that is confined to just one or two plants.

Remember that if you follow a regular schedule of spraying, tea scale wil be a minor problem in your garden.

Flower Arrangement

Regular Feature

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

According to THE HANDBOOK issued by the National Council of Garden Clubs, color is the **most compelling** and, at the same time, the **most dangerous** element in the arranging of flowers. We are already aware of its dramatic, compelling qualities. Our beloved camellias, vivid and rich in color, demonstrate this to us throughout the winter season. But how in the world can the beautiful color present in plant material be dangerous? We must realize that color is only one element in making a design. Because of its importance, and because of its compelling impact upon the eye it can "steal the show."

There can be good design without color, as can be seen in black and white photographs, but without **design** in flower arrangement color has no artistic value. Color must be used in accordance with the principles of design. Its stimulating effect can wield an enormous influence, and often does lift a mediocre design into a blue ribbon bracket. However, when exquisite and exciting color is superimposed upon really good design it can be one of the most powerful allies in creating arrangements of unusual quality and of great distinction.

WHAT IS COLOR?

What is color? We do not have to be very technical about it, but there are certain reactions which it calls forth, and certain color

terms with which we should be familiar. "Color is a visual sensation caused by light." When a ray of sunlight passes through a prism it produces a band of pure color, known to us as the solar spectrum. We also see this in the rainbow when sunlight shines through the raindrops. These colors range from red at one end through orange, yellow, green, and blue to violet at the other end. When the band of color is turned end to end we have a small color wheel.

The artist uses paints or pigments, the material that can absorb color, to express what he has to say. We flower arrangers work with "living color". Pigment color is surface color. Some of the light falling on a surface is absorbed and that which is not absored is reflected back as color.

A camellia is red because its petals absorb all the light rays except red. White reflects all rays of light, and black absorbs them all, giving back none. Since the coloring in plant material is pigment color, the pigment theory of color is the most practical for flower show use and practice. The color chart based on this theory has three primary colors, which are **yellow, blue,** and **red.** From these primaries all other colors are obtained. Combine the primaries yellow and blue and we have **green.** Blue and red mixed produce **violet** or purple, and red and yellow together give us **orange.** These three, green, violet and orange are known as secondary hues. We'll talk further about color in the next issue.

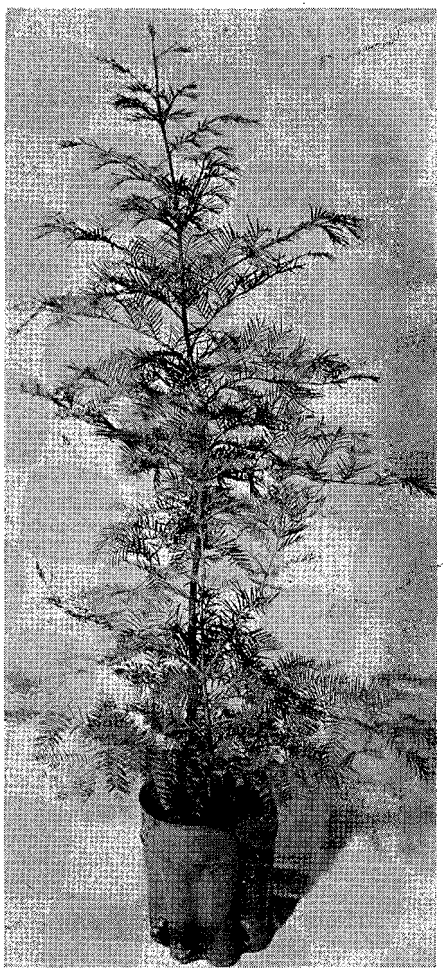
TREE, BELIEVED EXTINCT DISCOVERED IN CHINA

The discovery, in 1945, of a living species of Metasequoia (Dawn Redwood) by Mr. T. Wang, and its subsequent collection by an expedition dispatched by the Arnold Arboretum is one of the most unusual stories of modern horticulture.

Ten fossil species of Metasequoia from Cretaceous to Pliocene times, about 20,000,000 years ago, had been identified in Europe, Asia, and North America from fossil remains but the whole genus of Metasequoia was thought to be long extinct.

Mr. Wang, of the Chinese Central Bureau of Forest Research, discovered several groups of living Metasequoia trees in Northeast Szechwan and Southwest Hupeh, China in 1945. The trees were identified as Metaseqquoia at the National Central University, Nanking, and the Fan Memorial Institute of Biology, Peiping in 1946.

On learning of this amazing discovery, the Arnold Arboretum financed an expedition to secure seed. The first seed from the 1947 crop arrived at Boston in January of 1948 and a larger lot was received in July of 1948. The Arnold Arboretum shared these seed with



DAWN REDWOOD

botanical institutions throughout the world.

Fast Growing

Metesequoia proved to be an extremely fast-growing tree. One of the seedlings, planted at the Arnold Arboretum as a two-year-old in 1950, is now in 1960 about thirty-three feet high. Recent reports from Australia stated that trees there were more than 30 feet high and 12 inches in diameter at an age that could not have been more than twelve years. The Royal Horticultural Society Dictionary of Gardening says tthat seed sent to England made 16 feet or more of growth in 6 years from the seed.

In the Boston area the plants made three to four feet of growth a year when young. There have been reports from Oak Ridge, Tennessee of up to eight feet of growth in a year on young trees under unusually favorable conditions.

Description

The Royal Horticultural Society Dictionary of Gardening says that this tree is undoubtedly one of the most notable acquisitions to our gardens of recent years. The fern-like, spring foliage is of a very pleasant fresh green while the autumn foliage turns pale pink before dropping.

The name Metasequoia comes from "Meta" meaning "next to" Sequoia, that is, like our West Coast Redwoods Sequoia sempervirens and the Big Trees of California Sequoia gigantea.

The Dictionary of Gardening gives this botanical description: Metasequoia glyptostroboides, Dawn Redwood. A tree up to 100 feet high in a native habitat; deciduous; truck tapering; buttressed at base, bark dark grey but reddish brown in young trees fissured

peeling when old. Branchlets opposite, lateral foliage shoot deciduous in winter with the leaves. Leaves opposite, distinctly arranged in two ranks, linear, light green, up to ½ inch in length. Flowers monoecious, solitary. Staminate flowers auxiliary and terminal. Pistillate flowers solitary, about ⅓ inch in length. Cones ripening in the first year pendulous, sub-quadrangular-globose or shortly cylindric, up to ¾ inch long (not yet produced on cultivated trees).

Propagation

No viable seed have been produced yet on cultivated trees so far as is known in 1960. Since it is now impossible to secure seed from the original trees in China all increase must be from rooted cuttings. Cuttings reputedly root easily but this does not seem to be strictly true in commercial practice since there are some moderate difficulties in their large scale production. One stumbling block has been in getting the rooted cuttings through the first winter after rooting. This may be because the cuttings probably require a cold, dormant period which they do not get if attempts are made to winter them in a warm greenhouse. Until more is known it is probably better to take the plants through the winter under cold conditions where they usually do well since the plant is a hardy one.

Hardiness

The Arnold Arboretum reports that trees there in suitable locations suffered no injury in the devastating winter of 1958-59. The new plant hardiness zone map prepared by the National Arboretum lists Metasequoia as hardy throughout Zone 5B. The new Zone 5B includes most of old Zone IV on the old zone maps. This means that the plant is hardy, at least, to a line approximately through Lincoln Nebraska; Milwaukee; Lansing Michigan; Toronto; Syracuse, New York; Portland Maine and Nova Scotia; and in numerous areas north of that line.

The range of the plant is very wide since there are also plants growing on the Gulf Coast at Pass Christian, Mississippi and possibly even farther south.

Growing Conditions

The concensus of opinion is that Metasequoia grows best in moist locations. However, until more is known about its preference, it should probably not be planted on soil that is too poorly drained since experience in Tennessee and North Alabama seems to indicate that it grows better on normal, upland, field soil than it does in low spots where drainage is poor. Probably a well aerated top soil underlain by a high water table or good subsoil moisture is best.

New Camellias

Elegans Supreme

Regular Feature

Most of the camellias that have been covered under "New Camellias" have been seedlings. Occasionally an outstanding sport, such as **Betty Sheffield Supreme,** comes along and is presented as a new camellia.

The new camellia to be covered in this issue is also a sport. It is a sport of that all time favorite Elegans (Chandler) and is called **Elegans Supreme.**

It has been registered with the American Camellia Registration Bureau and carries registration number 501.

It was developed and is being propagated by W. F. Bray of Pensacola Fla. It was originally scheduled to be released this fall but due to the difficuty of getting grafts to take it may not be released this year.

Growth Habits

The plant growth habit is said to be spreading and dense, and medium rapid in rate. The dark green leaves average 3¾ inches in length and 1¾ inches in width.

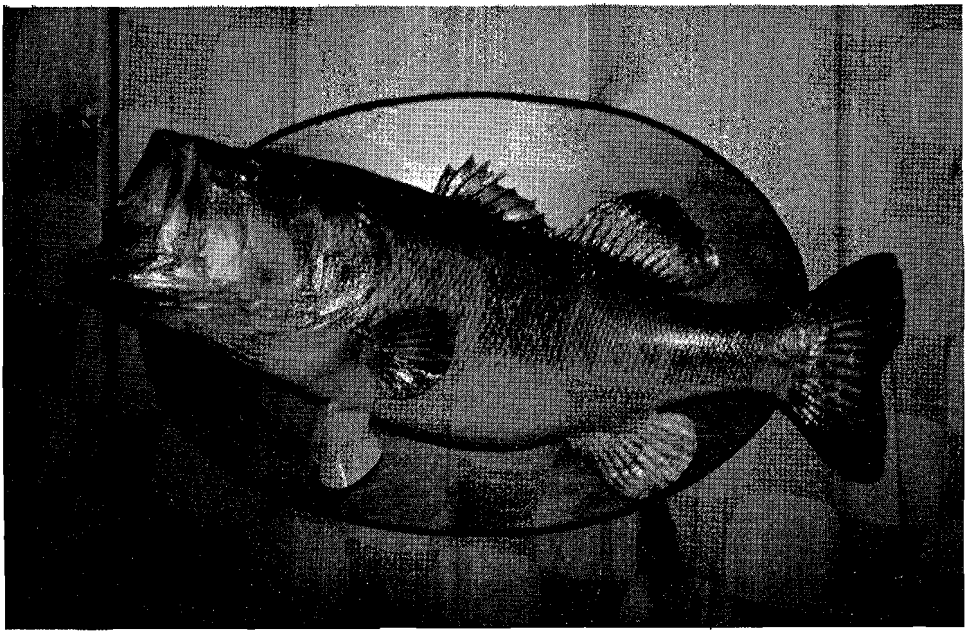
The flower is described as red wine in color and anemone in form. The flowers are 5½ to 6 inches in diameter and 1½ inches in depth. It is made distinctive by the ruffled and wavy petals with numerous petaloids resembling tips of bird feathers.

The blooming season is January to March.

Good Family

Those who have seen blooms on this flower are quite enthusiastic about it and the fact that it is a sport of Elegans is in itself a good recommendations for it, Elegans has sported a number of outstanding camellias such as Barbara Woodroof, and C. M. Wilson. The later has in turn sported C. M. Wilson, variegated, Shiro Chan, and Snow Chan. In addition Elegans has been one of the parents of at least 15 good seedlings. With this family background it is logical to expect that this latest sport will also be an outstanding camellia.

As stated above there has been some difficulty in grafting this sport when sasanqua understock was used but it is now being grafted on japonica understock with better success and perhaps it will not be too long now until it is available.



It's The Big One!

FISH OR CAMELLIAS

By ELEANOR GOODWIN

It was late October and an Indian-summer sun was disappearing behind the trees on the west bank of the St. John's River in central Florida.

My husband, an ardent bass fisherman, sat in the bow of a small fishing boat, obviously tired but happy. Tired from tossing a flyrod for the better part of the afternoon —happy from the results.

"Paddle us around by that point, Will, for just one more try and we'll call it a day," he told the guide.

The fly settled noiselessly on the water about 24 inches off the point. He twitched it once, causing it to wiggle and send out little ripples.

Then it happened. Instinctively, he set the hook with coordinated action of left and right hands, reflecting the experience of 20 years of fishing. Simultaneously, a largemouth bass came out of the water 30 feet away and danced around on his tail in the shadows of the bank.

Then he disappeared into the water.

SOMETHING SPECIAL

Although it was the second time I had accompanied my husband on a fishing trip in nearly 25 years of married life, I diddn't have to be told that this one was something special.

My attention was drawn from the fish to my husband on the bow. His face was ashen. His eyes sparkled with excitement. For a full minute he fished from instinct; otherwise, he was motionless and speechless.

Finally, Will, the guide, broke the tension when he drawled, "He's heading for deep water . . . keep your line tight . . . but give him his head or he'll tear that rig to pieces."

By this time I had the message. It was no time to giggle, squeal or ask a silly question. My husband responded to Will's instruction and in a matter of seconds he was fishing with his usual poise.

Ten minutes passed and the battle of fish and man raged along the edge of the lily pads. I looked at my husband who had been quite jubilant and talkative when he had hooked fish earlier in the day. But not this time. He sat silent and motionless, except for his hands which responded automatically. Huge beads of perspiration stood on his forehead despite the coolness of the late autumn evening.

Risking a scolding for moving about in the boat, I quietly worked my way around the tackle box, over the lunch basket and the drink cooler and joined my husband forward where I wiped the perspiration from his forehead, opened the zipper in his shirt collar, and gave him a draw from a

lighted cigarette. Then I found my way back to my seat midship.

EVERY TRICK

In the next five minutes I saw that bass try every trick I had read about or heard about in his sessions with his fishing buddies. It was a majestic and thrilling sight there in the October dusk.

After nearly 10 minutes more, the fish was boated and we headed for the dock. It was completely dark when we reached dock-side and my husband and the guide worked silently iceing the fish and storing the gear in the car.

There was a long confab between my husband and Will, and I saw my husband pay him and bid him goodbye. Silently we drove to the Lodge for what I thought was going to be one of those famous Lodge dinners I had heard so much about for the past five years. Instead, twenty minutes later I found myself completely packed and en route to Jacksonville sixty miles away. The suspense finally got the best of me so I decided to find out just what the plan of operations was.

"Look lover boy," I pouted. "I stayed home with the children for over twenty years before you invited me on one of these Florida fishing expeditions. First I get the Gary Cooper treatment . . . then I have to pass up that luscious dinner at the Lodge . . . and now I realize we are headed homeward after one day of what was to be a three-day fishing trip in sunny Florida. Will you kindly fill me in on what gives?"

There was a long silence. Miles passed. I glanced at him from the corner of my eye. The telephone poles zipped by rapidly.

Finally he said, "This time the big one didn't get away."

Another half hour we pulled up at the shop of a taxidermist on the outskirts of Jacksonville and he carried his prize inside.

Today, eight years later, that mounted bass adorns the wall of our den, and the dust-covered fly-rod with a dangling rusty fly stand in a nearby corner as proof that the "big one didn't get away."

Landing the "big one" proved to be the end of the rainbow for my fisherman-husband, and it looked for a while like he had "had it." But not for long.

In less than two years he was digging in the back yard, and it wasn't for fishing worms. He was planting camellias.

Now, instead of chasing his "big one" from Currituck to Florida, he is trying to raise the "big one" for a Camellia Show.

To be honest, I like it this way. It's nice having him underfoot even if he does snitch all my clothespins, keep smelly insecticides in my kitchen cabinet, and haul me all over the country looking for a rare or hard-to-find plant.

Sleeper

Mrs. Josephine M. Hearn

Regular Feature

It might be said that there are two kinds of sleepers when this term is used in connection with camellias.

The first would be a fairly new camellia that has for one reason or another not become well known or widely distributed. The second would be a camellia that has been around for many years but one whose true worth has for some reason, been overlooked.

A camellia that comes under this second classification is Mrs. Josephine M. Hearn. It has been around for many years but its true worth has not been fully appreciated.

Good In Garden

You will not find this one at the head table in a camellia show and as a matter of fact you may not even see it entered in a camellia show but you will be sure to notice it in those gardens that have a plant of it in bloom.

It has been said that Mrs. Josephine M. Hearn is a seedling of Daikagura. Whether this is so or not we do not know but we do know that it blooms some in the fall always by Christmas, and in addition, it continues to bloom into the spring. This long blooming season is just one of several good features of this variety.

Cold Hardy

Not the lest of its good qualities is the fact that it is cold hardy. A cold spell may stop its blooming but after a few days of warm weather it is ready to start blooming again and the open bloom itself will stand cold weather very well.

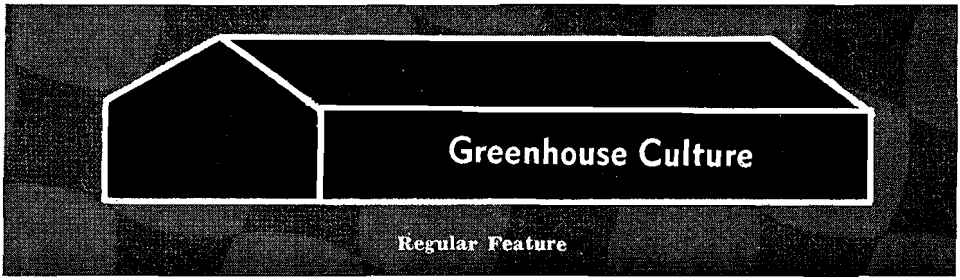
The flower, while not large by present day standards, is large enough to make a vary satisfactory corsage flower. It is a dark rose pink in color and is a high semi-double with fluted petals. The blooms hold on the plant for a long period of time and when they do fall they fall clean as a single unit and do not shatter.

Upright Growth

The plant has a medium, compact, upright growth and when covered with booms makes a fine specimen plant.

While it will never win a "Best In Show" award it has many qualities that make it superior to some of the "Best In Show" varieties as a landscape plant in your garden.

To sum up—it has good growth habits, good bloom form and color, good lasting qualities is a profuse bloomer makes a good landscape plant, and last but not lest is cold hardy. Not many camellias can match it in all of these desirable features.



Sometimes a person who does not grow camellias may ask a grower if he grows camellias in a "hot house". The grower may reply that orchids are grown in "hot houses" but camellias are grown in greenhouses or glass houses.

At the same time he is saying this, the grower may be thinking, in his mind, that, sometimes when the sun shines, his greenhouse is a "hot house". It is not unusual, even in the middle of the winter, when the sun is shinning, for the temperature inside a greenhouse to get into the 70's, 80's and even the 90's

Heating a greenhouse for camellias is not much of a problem for all that is necessary is enough heat to keep the temperature above 32° The big problem is keeping the temperature down for as stated above, the temperature can build up to disastrous heights, even in the winter time.

There are a number of things that can be done that will help keep the temperature down depending on the location and type of greenhouse you have.

Some of these are as follows:

Ventilation

Probably the most important requirement of a camellia greenhouse is adequate ventilation. It is impossible to have too much ventilation. The more windows or openings the better. Certainly some high openings are necessary to let out the hot air as it rises.

If your house is already built and it does not have sufficient ventilation you should consider installing a fan to help "pull" the hot air out.

Shade

Shade from direct sun is most important. Natural shade from nearby pines is good. Tobacco cloth tacked on the sunny side and/or overhead is helpful. Bamboo or other types of slats or shade ma-

terial proberly placed, especially if it can be easily moved when not needed, is very good.

Some growers find it necessary to paint the glass of their green houses towards the end of the blooming season in the early spring. This of course is a lot of work but special paint material is available that will gradually wash off from rain so that when the winter months come you will have plenty of light again.

Water

A new method of cooling is by use of water. This can be used in several ways.

One way is to have a fan draw air into a greenhouse through some type of wet material such as wet excelsior or some of the special materials which can be bought from a greenhouse supply company. Many orchid growers are very successful in using this method.

Another way to use water for cooling is to have it sprayed in a fine mist on top of the greenhouse roof.

These uses of water, in addition to lowering the temperature as much as 10%, will also build up the humidity. High humidity is very important in producing good camellia blooms and is especially important on hot, dry days when the temperature is at its highest.

Unless you are rich enough to air condition your greenhouse the battle of heat wil be a never ending one. However, by following some of the suggestions listed above or a combination of these you will find that you can hold your greenhouse temperature to a fairly reasonable level except on the hottest days.

Old Favorite

DAIKAGURA

Regular Feature

By Albert Fendig

Brunswick, Ga.

DAIKAGURA is an old Japanese japanica, at least sixty-seven years old for it was listed by the Yokohama Nursery in 1895. Its Japanese name translates into "Lion's Dance". An imaginative person possibly might envision its curving semi-upright petals as dancing lions but a Japanese name meaning "fine early bloomer" might be more appropriate, for in the fall DAIKAGURA, and its family of mutants and seedlings, are among the finest showpieces in camellia gardens.

This cultivar is extremely variable as to color and form and strikingly illustrates the importance of the selection of certain strains in preference to others. Normally, it is deep pink or carmine rose blotched with white, about 4½ inches in diameter by 2¼ inches in depth. In the case of the Ward anr Wannamaker strains, and doubtlessly others, it is more nearly white moired with pink. The flower is one of the incomplete double form, having notched, wavy and recurving petals. The inner part of the bloom is an irregular mass of vari-sized petaloids mixed with and joined to four or five groups of stamens.

Easily Identified

This is one cultivar easily identified by its typical elliptic, coarsely

SEE PAGE 46
If Interested
in Back Issues
CAROLINA CAMELLIAS

serrated and venated leaves, terminating in short, sharp points. Although its branches tend to be pendulous it should be classified as an upright, densely foilaged shrub.

This cultivar also has been called by the names of KIYOSU and IDATEN-SHIBORI.

While its first listing in the United States is Domoto's 1932 catalog it may have appeared here earlier for there are old plants to be found, including one growing in Sacramento County, California.

Red and Pink

Among its mutants is its self red form called in this country DAIKAGURA RED with synonym of SHANGRI-LA. Japanese nurseries list this form as BEN - DAIKAGURA and AKA - DAIKAGURA, and a paler red as KUMA-BOTAN. The pink form is generally known as DAIKAGURA PINK in this country and as PINK KAGURA and MOMOIRO-DAIKAGURA in Japan. HIGH HAT, the beautiful shell pink may well be synonomous with YOKOGAWA in Japan.

There is a cultivar known as SHIRO - DAIKAGURA, but the flower and the foliage does not correspond with the true DAIKA-KAGURA type and is not believed to be related. Neither is JOSHUA E. YOUTZ believed to be a mutant, although it is possible that it may be a seedling of DAIKAGURA. It is believed that CONRAD HILTON, mutant of HIGH HAT, is the only known white form.

Its seedlings are said to include MARGARET HEARN, MRS. JOSEPHINE M. HEARN, whose synonym is DELIGHT, MRS. MARIE KEATING, PINK DAWN, and INDIAN SUMMER.

ACS ANNUAL MEETING HELD IN CHARLESTON

The 1962 annual meeting of the American Cemellia Society was to be held in Shreveport, La. However, due to three consecutive days of sub zero weather, the Shreveport people felt that they would not be able to put on a Camellia show.

Charleston, S. C., which was scheduled to have the annual meeting in 1963, agreed to exchange dates with Shreveport and with only a little more than a month to prepare did the work that usually takes almost two years.

Working under this tremendous handicap the Charleston people, led by Mr. H. E. Ashby, ACS Director at Large, put on a meeting and show which, those in attendance agreed, was one of the best meetings in the history of the society.

It is too bad that this un-avoidable change in plans made it impossible for many to attend who had planned to go to Shreveport. On the other hand, there were many from the area who were able to go to Charleston who could not have gone to Shreveport.

With an extra year to work on their plans Shreveport has promised to give us the biggest and best meeting ever next year—provided the weather cooperates. So begin making your plans now for next year.

SURVEY TO DETERMINE COLD HARDY CAMELLIAS CONTINUED UNTIL FALL

The readers of the Bulletin were asked to help in a survey to determine the most cold hardy camellias. In order to give as complete picture as possible it has been decided to wait until the fall issue of the Bulletin to tabulate the results of this poll.

This will give our readers a chance to include their experience this winter in making up their lists of ten most cold hardy varieties.

In order to get the experience of as large a group of growers as pos-

sible from as large a geographical area as possible your help is needed in sending in your own list.

When these lists have been tabulated they will furnish some very valuable information which can be used as a guide in buying cold hardy varieties.

The information desired is with reference to the cold hardiness of the **bud** and the **blooms** and **not** the plant itself since it is assumed that all plants are more cold hardy than the blooms. In other words what is the lowest temperatures after which one may expect normal flowers.

For your convenience we have prepared a sheet in the Bulletin that you can use to list the desired information.

Please send the information to: Carolina Camellia Bulletin Box 166, Rock Hill, S. C.

Name of your town_____

Your most cold hardy variety_____

Your most 10 cold hardy varieties:

	Variety	*Protection			Lowest Temp. at which it performs Normally	No. Years Observed
		Good	Average	None		
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

Many conditions other than temperatures can have a bearing on the cold hardiness of a variety so please make any comments you care to that will shed additional light on your experience.

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*Protection as used here refers only to outside plants. None would be no protection of any kind. Average would be such as furnished by pines overhead. Good would be used as a protected corner of your house or fence, etc.

Beginner's Corner

Summer Care Means Winter Blooms

Regular Feature

The summer care of your camellias is what determines the type of blooms you will have during the winter. In the Winter issue of Carolina Camellias summer care as it applies to fertilizing, watering, and syringing was discussed.

In this issue we will cover pruning, disbudding, weeding, mulching, and spraying.

Pruning

Probably the most neglected of all phases of camellia culture is pruning. Because most varieties are by nature slow growing most growers do not like to cut off any wood. This is a short sighted viewpoint. The best, heaviest blooming camellias anywhere are those nursery plants which have been ruthlessly sheared for cuttings each year.

There is a great variation among camellias in form and growth habits. Some are naturally well shaped and require little prunning. Others must be topped and branches shortened back to produce compact growth.

Before making any cut, visualize the effect it will have on the general outline of the plant. Weak or diseased branches should be removed entirely. Lanky, crossing growth should be cut out All plants have weak little branches inside that never have a chance to grow or produce good blooms. (They also increase the chances for disease since they make it difficult to spray the inside area of the plant). Cut out this weak inner growth to admit light and air and to throw all the strength of the plant to productive wood.

Sharp Tools

All general rules of pruning apply to camellia pruning. Sharp tools are essential. Make all cuts to the trunk, a strong branch, or a growth bud to eliminate stubs and promote quick healing. Where larger branches are removed the cut area should be painted with a pruning compound to prevent decay.

The old saying of, "Spare the rod and spoil the child" could be changed to "Spare the Shears and spoil the plant'". Intelligent pruning will pay big dividends in well shaped, strong and healthy plants and bigger and better blooms.

Disbudding

The principal reason for disbudding is to obtain large specimen blooms. Some varieties such as Pink Perfection have small blooms and should not be disbudded because their beauty lies in their profusion of blooms. On the other hand those varieties having large blooms will benefit by disbudding.

The time to disbud is just as soon as you are able to definitely distinguish the fat round bloom bud from the slender growth bud and for the best results only one bloom bud should be left at any one terminal. If possible, select buds at various stages of growth so they

will not all bloom at the same time. Buds may be removed by carefully twisting them off being careful not to damage the growth bud.

Weeding

Summer is the time to weed your camellias. Even though your camellias are mulched some weeds, grass, etc., will come up around and through the mulch. Pull these weeds by hand. **Never** cultivate around camellias as they are shallow rooted plants and will be damaged by digging.

Mulching

In its natural enviroment in the forest, growing as an undershrub among trees, the camellia is naturally mulched by falling leaves, twigs, and flowers. We try to duplicate this natural enviroment by mulching.

Spring is the time to replace mulch about your plants. Whether to remove the old mulch and replace it or just add to it depends upon the condition of the old mulch and its depth. Sometimes, over a period of years, the adding of mulch builds up and becomes too high and thick about the trunk of the plant. When this happens it is the equivalent of planting too deeply and the old thick mulch should be removed and replaced with fresh mulch.

There are a number of type materials that can be used for mulching, however pine needles are as good as any and better than most. In addition pine needles are both attractive and easy to obtain in most areas. Do not use peat moss since it has a tendency to cake when dry and it will then shed water and make it difficult to water the plant.

Spraying

The camellia probably has fewer pests than most plants but it is subject to some. However, a few general precautions will pay dividends and limit your difficulty with these pests.

Probably the most common of the pests that trouble camellias is the sucking pests. Of these, four species cause the most trouble. They are, tea scale, camellia scale, Florida red scale, and peony scale. Aphids often attack new growth and buds on camellias.

Chewing pests such as caterpillars, grasshoppers, and beetles such as the Strawberry Root Weevil may cause considerable damage to the tender new growth. They seldom, if ever, bother mature growth. It is not possible in this article to go into all the details of identification and treatment for these pest. However we have covered this in detail in other issues of the Bulletin and will continue to do so in the future.

Basically the scale pests are controlled by spraying with an oil emulsion spray such as Volck applied as per directions on can or bottle. It is important that no emulsion be applied on bright hot days or on cold days. This would of course mean that the best time to spray would be in the spring before hot weather and in the fall before cold weather. Best control for chewing pests is obtained by spraying or dusting new growth with one of the stomach poisons.

Conclusion

If you don't forget your plants during the summer month they will not forget you when the blooming season rolls around and you will be rewarded by many large and beautiful blooms through out the fall, winter and spring.

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What's New

New Chemical Speeds Up Blooms

Regular Feature

More and more camellia growers are planting camellia seed in an effort to produce new varieties. However there is one universal complaint in this connection and that is due to the fact that, even under ideal conditions, a seedling rarely blooms in less than 4 years after germination of seed and usually 5 to 8 yeads elapse before the first bud is set.

Now there is a possibility that research scientist have come up with a chemical that will make camellias "step on the gas" as far as setting buds is concerned. The chemical that makes the camellia "step on the gas" does it by "putting on the brakes" for the chemical is actually a growth retardant.

Experiments

USDA scientist at the Agricultural Research Center at Beltsville, Md. and research scientist at the Georgia Coastal Plain Experiment Station at Tifton, Ga. are both working on this problem now and preliminary results are most favorable although much further work will be necessary to discover the full potential of these chemicals.

The original work at Beltsville Md. was done with azaleas and it was found that when treated with growth-retarding chemical the azaleas defy the calendar and produce their flowers in summer and fall as well as the usual winter-spring blooms.

Even the scientist don't know exactly what happens but they reasoned that if the chemical worked with azaleas it would probably work with other woody shrubs such as camellias rhododendrons, etc.

Controlled Tests

In view of this experiments are being made on camellias by Dr. D. L. Gill at the Experiment Station in Tifton, Ga. Controlled tests were made as follows using two chemicals on cuttings of Blood of China:

"The growth-retarding treatments were applied to plants prior to their starting a flush of growth. Materials used were phosfon (tributyl-2, 4-dichlorobenzyl-phosphonium chloride) and ACC [(2-chloroethyl) trimethyl ammonium chloride]. The phosfon (technical grade, 100 percent) was dissolved in water and 50 ml. was applied per pot as a soil drench on each of 2 consecutive days (100 ml. is equivalent to approximately 3⅓ fluid ounces). The CCC (50 percent acqueous) was diluted with water and was applied as a soil drench like the

phosfon. Both retardants were applied also as foliar sprays, which contained 0.1 percent Tween-20 as a wetting agent. The sprays were applied to run-off 3 times at weekly intervals. Drench treatments were made April 8 and 9, May 3 and 4, and June 15 and 16 to plants in a pad-and fan-cooled greenhouse at Tifton, Ga. Day temperatures ranged from about 75 to 85° F. with night temperatures at a maximum of about 80°.

Produced Buds

A check of flower buds made on August 5 showed that 15 of 24 plants that received the CCC drench in April produced 37 flower buds, whereas only 1 of 6 untreated plants produced 2 buds. Total new shoot growth of each treated plant was one-quarter or less than that of the untreated ones.

Similarly 22 of the 30 plants drenched with CCC in May produced 68 flower buds whereas 2 of 6 untreated plants formed 4 buds. New shoot growth was drastically reduced somewhat in proportion to the concentration of the CCC applied.

Retarded Growth

Foliar application of CCC in April and May did not stimulate flower-bud formation but retarded shoot growth considerably. This was disappointing since this method lends itself well to garden and nursery use. Possibly other test may reveal ways in which this can be used as a foliar treatment.

As stated above the results although promising are only preliminary and must be considered as such.

However, if continued test prove effective on seedlings the treatment will certainly be a boon to all camellia growers who are planting seed and will also be a big help in speeding up work on hybrids.

Question: Are Sasanquas hardy?

Answer: While the blooms on sasanquas are not as cold hardy as some of the Japonicas the plant is very cold hardy and most varieties, when well established, can almost be forgotten. It will probably stand more adverse conditions such as dry weather or wet weather than the Japonica

Question: How should fertilizer be applied if a mulch is used?

Answer: Some growers rake the mulch back, apply the fertilizer and then replace the mulch This is satisfactory but is a lot of work and probably not as satisfactory, or any more satisfactory, than spreading the fertilizer on top of the mulch. When the fertilizer is spread on top of the mulch it gradually filters down through the mulch each time it is watered or it rains and so the plant is not receiving all the fertilizer at once, but in small amounts over a longer period of time, and this is more desirable.

Question: Can camellias be fertilized by spraying?

Answer: Yes. There are many brands of commercials on the market that can be mixed with water and sprayed on the foliage of camellias, and are very good if used according to directions. See the article in this issue of the Bulletin about foliar feeding.

Questions Can cuttings be made any time of the year?

Answer: Yes. It is possible to make cuttings any time that the wood has hardened off. Some varities even seem to root easier if taken in the late winter or early spring just before the new growth starts. Cuttings should not be taken while the growth buds are making active growth.

Question: How old should a plant be before pruning is done?

Answer: That depends on the variety and the particular plant. Some varieties tend to have a long leggy growth and it might be necessary to start prunning them at a very early age in order to shape and control them. Other varities, that grow slowly or have a compact growth, might not need any pruning for years and even then might require only a small amount of pruning.

Question: What spray should be used for black aphis?

Answer: There are a number of sprays that can be used on black aphis. Probably the most popular for this purpose is a nicotine spray such as Black Leaf 40, Isotox can also be used as well as Malathion although the latter has a most disagreeable odor that tends to linger for a long time. Naturally you should be careful with any spray you use.

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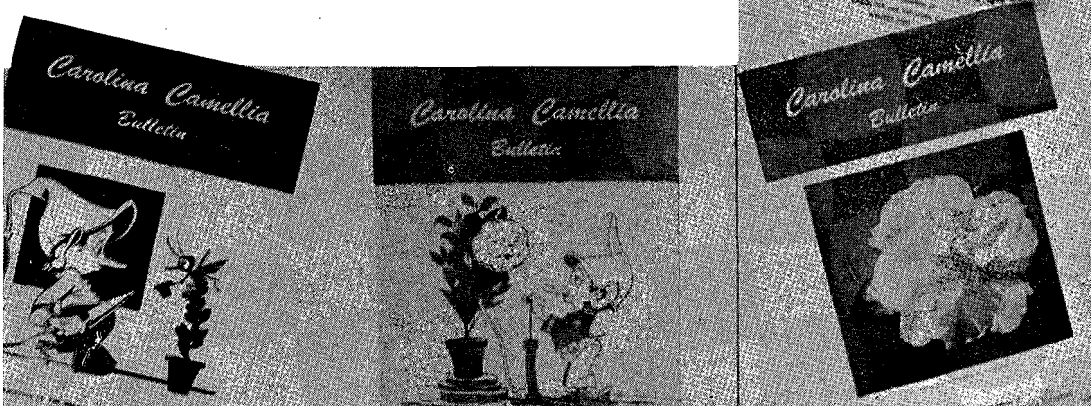

Last call for grafting. It will soon be too late to cleft graft. Finish your grafting now before the new growth starts. You can regraft on the understock that didn't take a little later than on the regula understock that you are grafting on for the first time.

Take Inventory. Decide which pants are worth keeping. Some of them are good for understock only. Think back over the mistakes you made with your plants this past season. Decide how you are going to take care of them this season.

Replace your mulch. Winter weather has probably been hard on the mulch around your camellias. Perhaps you can see the ground under some of your plants. If so, add some mulch for the shallow roots need this protection from the summer sun.

Paint and repair your greenhouse. Now is the time to do the necessary maintenance work on your greenhouse. A little paint now can save you a major repair job a year or two from now. Remember you can't do much painting or repairing after you move your plants

back into your greenhouse.

Now is the time to build that greenhouse. Now is the time to quit talking about building that greenhouse and do it. If you are going to have it ready for your plants this fall now is the time to begin work on it. If you wait too late in the summer to start it you won't have it finished before the first freeze. This is true whether you buil dit yourself or have someone else build it. It takes time and it is better to be early than late. One freeze before you are ready and you can loose a whole season in one night.

Pot your plants now. If you are building a greenhouse now is the time to start potting your plants so they will be established in containers and ready to give you some blooms this fall. Now is also the time to do your repotting. If you have root bound plants move them up to larger containers.

Don't forget to disbud. Although there will be no buds on your plants when you receive this Bulletin it will not be long before the new buds start forming. Some varieties set buds early in the season while other varieties do not set buds until late in the summer. Disbudding is a continuing job that cannot be done all at one time, but it will pay big dividends during the blooming season in the form of larger and better blooms.

Last call for pruning. Although you can prune almost anytime do not prune in the late summer since this will probably cause a new cycle of growth which may not have time to harden off before cold weather. Now is the time to shape your plants before a lot of wasted energy goes into limbs that are growing in the wrong direction.

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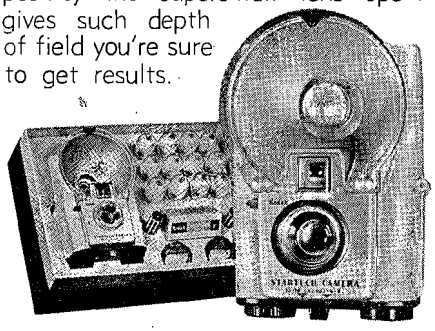

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