

FEBRUARY 1994

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The *Camellia* Journal



'Tony Hunt'

**OFFICIAL PUBLICATION
OF THE**
American Camellia Society

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The Camellia Journal

WORLD'S LARGEST PUBLICATION DEVOTED TO THE GENUS CAMELLIA

OFFICIAL PUBLICATION OF THE AMERICAN CAMELLIA SOCIETY

VOLUME 49

NUMBER 1

FEBRUARY 1994

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About the Front Cover

A very large, pink, semidouble to loose peony form. It has vigorous, upright growth and blooms midseason. (Reticulata hybrid 'Overture' x Reticulata hybrid 'Lasca Beauty') It has been registered by John Hunt, Australia, 1991. Photo by Dr. Robert Withers. *Cover by courtesy of the Gulf Coast Camellia Society.*

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FROM THE PRESIDENT



Carl Allen

The Fall Meeting of the Governing Board of ACS and the Board of Directors of the ACS Development Fund was held in Denver, Colorado September 25th, and was most productive and enjoyable to those who attended.

Deane Hall planned and executed the program, and he is certainly to be commended for all the work he put into this endeavor to make it such a complete success.

Friday evening ACS delegates were hosted at a reception at the Denver Botanic Gardens by members of the Board of Directors

of the Denver Botanic Garden and the Betty Ford Alpine Garden of Vail, Colorado. Mr. Richard H. Daley, Executive Director of the Denver Botanic Gardens, and Mrs. Helen Fritch, President of the Vail Alpine Garden Foundation were there to greet us.

On Saturday the meetings of the Governing Board and the Development Fund were held. During the meeting of the Governing Board, Stuart Watson proposed a restated "Articles of Incorporation" and "By-Laws" for both the American Camellia Society, Inc., and The American Camellia Society Development Fund, Inc. These documents included all changes made for the two corporations since the last incorporation process. These were approved, submitted to the State of Georgia, and approval by the Secretary of State has been received.

Bob Stroud gave a detailed description of the plans that have been made for the Annual Meeting at Slidell, Louisiana, the last week in February of 1994. The people in Slidell have gone all out to make this a great Meeting.

Between the Board meetings, we were given a guided tour of the Denver Botanic Gardens by Mr. Ken Slump, Plant Records Manager of the Gardens. It is in downtown Denver, and although it is a very young garden it was most spectacular.

On Sunday, Deane had arranged a trip to Vail, to see the Betty Ford Alpine Garden, and this was thoroughly enjoyed by all. Many of us rode up the Gondola to the top of the ski trails, and although it was a bit early for snow, the Aspen trees had just turned, and gave a golden hue to the landscape.

When this Journal is received, it will be in the middle of many shows, and we wish all of you many journeys to the HEAD TABLE.

We look forward to seeing many of you in Slidell. ♦

Scion Selection And Grafting

Luther W. Baxter, Jr., Charles Cruickshank and Betty Cruickshank*

After grafting about five-thousand camellias scions during the past ten years, a few things have been found that are important to know. First, the site of the donor plant gives us some valuable information. Plants in moderate shade to full sun collect more sunshine, the source of energy for the entire plant-growth system. Second, scions taken from top twigs of plants usually have one to five mature vegetative buds, whereas lateral (more horizontal) twigs may have only one or two. Scions from these terminal twigs are excellent for grafting.

Scions with two-to three-vegetative buds and two to three leaves are used.

As terminal stems become lateral stems through successive years of growth, flower buds are produced at the terminals of current-season twigs. When flower buds form, part of the energy collected by nearby leaves is diverted into developing flower buds, leaving less energy available to support development of vegetative buds.

Some *Camellia japonica* cultivars, such as 'Ville de Nantes' and 'Dr. Tinsley', set many seedpods which siphon off much of the collected sunlight energy. These plants may then set and mature only one vegetative bud and no flower buds on twig terminals supporting seed pods.

Third, remove any flower buds from scions before grafting. If adjacent vegetative buds (terminal buds) are mature, grafting of these scions is usually successful. However, if vegetative buds are

not fully developed, some scions may graft and grow, while others do not.

The factors involved here are size and health of understock. On small, healthy stock, scions with underdeveloped vegetative buds may graft successfully though they grow poorly, or stay as grafted

*The factors involved
here are size and
health of
understock.*

except they develop vegetative buds. However, since scions usually have only two leaves, it is difficult for them to accumulate much sunlight energy and so as a result, growth of stock roots and stems is poor.

On larger stock plants (one-half inch or larger), underdeveloped buds mature and are forced to grow by energy stored within the basal part of larger stock plants. In other words, when larger plants are used for grafting, remaining basal stems and roots supply needed energy to force growth of scions, even those with immature

vegetative buds.

In all cases, when scions are selected from plants grown in the southeastern United States, they should be soaked for an hour or more in a Captan-3336 suspension before grafting.

SUMMARY: While there are exceptions, scions should be selected from (1) plants grown in good light (not from plants grown under dense shade, such as under dogwood trees), (2) plants facing the sunny side (southwest, preferably) near, or at the top of the plant, (3) plants free of cankers or dead branches, and (4) plants that preferably are well-spaced and grown outdoors. There is less chance for dieback from outside-grown plants compared to greenhouse-grown plants.

Fourth, stock plants used for grafting should preferably be *Camellia sasanqua* or *C. oleifera* cultivars or their seedlings since these plants are resistant to camellia root rot, caused by the soilborne fungus, *Phytophthora cinnamomi*.

Fifth, spray with fungicide for best results with scions taken from greenhouse-grown plants. These mother plants probably should be sprayed to runoff with a mixture of Captan and 3336 WP (use as directed on the package) every seven to fourteen days during the months of January, February, and early March, the normal time of grafting, depending on location.

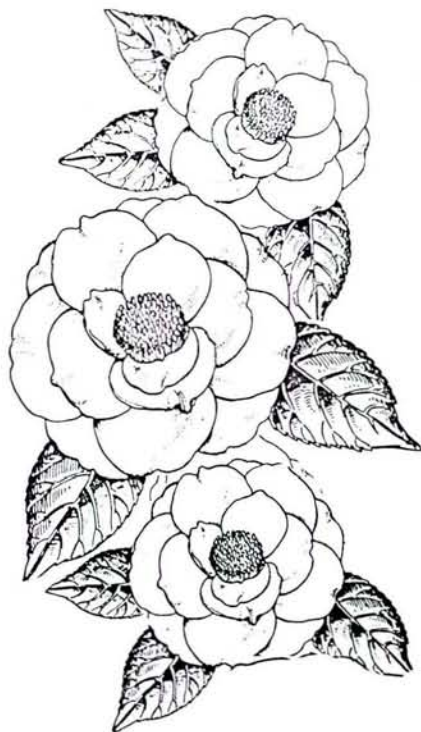
Once again, soak all camellia scions in a Captan-3336 mixture at time of grafting. We leave scions in this mixture as grafting

is done, so the last few scions may be in the mixture for several hours. This causes no injury to good scions.

If you have questions about scion selection (or grafting) address them to Luther Baxter, 2927 N. Bayshore Drive, Seneca, SC 29678, or to Betty Hotchkiss, The American Camellia Society, One Masee Lane, Fort Valley, GA 31030. Betty can answer most, if not all, questions about scions and grafting.

You may want to call one of us: Luther Baxter - 803-882-4533, Betty Hotchkiss - 912-967-2358.

**Luther W. Baxter, Jr., Professor Emeritus, Department of Plant Pathology and Physiology, and Volunteer, S. C. Botanical Gardens, Clemson University and Charles Cruickshank and Betty Cruickshank Volunteers, S. C. Botanical Gardens, Clemson University.❖*



AMERICAN CAMELLIA SOCIETY ANNUAL CONVENTION SLIDELL, LOUISIANA

FEBRUARY 23rd Through 27th, 1994

LaQuinta Inn

Interstate 10 Highway West

Slidell, LA 70458

(504) 643-9770

See Nov. 1993 Journal Pages 4 & 5 for more information.

Wednesday

February 23, 1994

2:00 p.m.

American Camellia Society Board of Directors Meeting

6:00 p.m.

Cocktail Reception

7:00 p.m.

"Local Favorites" Buffet Dinner

Thursday

February 24, 1994

7:00 a.m. to 9:00 a.m.

Buffet Breakfast

9:30 a.m. to 12:00 noon

Educational and General Membership Meeting

Lunch on your own

2:00 p.m.

American Camellia Society Development Fund Board of Directors Meeting

6:00 p.m.

Dinner at the "Plimssoll Club", International Trade Mart, New Orleans

Friday

February 25, 1994

7:00 a.m. to 9:00 a.m.

Buffet Breakfast

9:00 a.m.

Depart, Bass Pecan and Camellia Company Lumberton, Mississippi, Lunch included

6:00 p.m.

Seafood Jamboree, Under the Oaks

Saturday

February 26, 1994

7:00 a.m. to 9:00 a.m.

Buffet Breakfast

7:30 a.m. to 11:00 a.m.

Set up for Show, Put out flowers for show

11:00 a.m. to 2:00 p.m.

Judge the Show

2:00 p.m.

Show open to public

6:00 p.m.

Cocktails

7:00 p.m.

American Camellia Society Banquet LaQuinta Inn

Sunday

February 27, 1994

Price:

Depart for Home

Full Convention - \$175.00 per person

Wednesday - Feb. 23 - \$35.00

Thursday - Feb. 24 - \$75.00

Friday - Feb. 25 - \$55.00

Saturday - Feb. 26 - \$55.00

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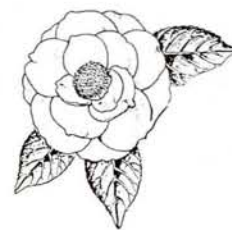
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KUNMING

The City of Camellias



John V. Slyker

The People's Republic of China, that fascinating, emerging country of the Far East was the destination of a recent trip made by my wife and me. Our starting point was the Great Wall of China and the formerly Forbidden City of the Ming Dynasty in Beijing. From there, via Southern Airlines of China, we proceeded to the Camellia country of southwestern China. Short stays were made to enjoy the fascinating Terra Cotta Warriors, cloisonne and jewelry factories, open markets, pagodas, temples and Bonsai gardens, in Xian, the ancient capital of China. Onward to Chengdu to visit the Woolong Panda Preserve surrounded by bamboo forests. In

Guilin, the highlight was a boat ride on the Li River to view the fabulous karst mountains and fishing villages.

The high point of the journey, however, was a weekend stay in Kunming in Yunnan Province. Kunming is known as the City of Eternal Spring and Kunming's city flower is the Camellia (Cha Hua in Chinese), which is evident everywhere. In the magnificent lobby of the Golden Dragon Hotel, many 5-6 ft. potted Camellia plants are displayed. The generously-budded plants are removed most every day to the hotel's courtyard garden for grooming and exposure to natural light.

The area around Kunming provides most of the reticulata

strains from which many cultivars have been developed, not only in China but also in the United States and other Camellia-propagating areas. At this time, botanical research is under way toward development of yellow color in new cultivars. *C. Chrysantha*, introduced approximately 20 years ago, and more recently discovered yellow species are being used.

It was with the gracious cooperation of the ACS Executive Secretary, Ann Blair Brown, who prior to my trip had mailed letters of introduction to officers of the Kunming Institute of Botany, that we were met and welcomed to the area at the Golden Dragon Hotel, in Kunming by Professor Zhang Ao-luo and his wife



Professor Zhang Ao-luo and his wife Professor Xia Lifang at the International Friendship Gardens, Kunming, China.

Professor Xia Lifang. Since our weekend in Kunming coincided with a Chinese National Holiday, we felt particularly favored that both professors would give up holiday time for us.

Since it was a holiday and our hosts were expecting house guests that afternoon, our day began early in the morning. It was to be a busy morning, crowding the many activities and visits into a few hours. We drove to the extensive park-like Camellia plantings of the Kunming Institute of Botany. October 1 was too early for blossoms, however, plants were heavily budded, promising many flowers in a very short time. Suitable areas are set aside for collections of Japonicas and other cultivars. Most of the plantings are indigenous species, with emphasis on *Reticulatas*. There are many mature specimens 10-15 feet tall. Many Camellia species originated in Yunnan Province and other provinces as far west as Tibet.

Of special interest is the International Friendship Camellia Garden, planted in 1984 by representatives of the United States, Great Britain, New Zealand and Australia as a gift to China. The late Milton H. Brown, ACS, represented the United States. Although many of the *C. Japonicas* are thriving, frequent gaps are evident where, as Professor Zhang pointed out, visitors to the park not only collected scions but actually dug out many plants. Replacements, however, are being propagated from scions of the original plants. After posing for pictures at the monument erected to dedicate the International Friendship Garden, we visited the Institute of Botany itself, and in particular, the private propagating greenhouse of Prof. Xia Lifang. She and her students are busy hybridizing and conducting research. Much emphasis, apparently, is being centered on development of yellow camellia hybrids, both large and small, from blossoming species, particularly *C. Chrysantha*.

Clay pots are used exclusively for all propagation - no plastic pots are in evidence. However

rooting scions were observed in plastic bags with suitable medium placed upright on benches. Among approximately ten species in Professor Xia's greenhouse, there was a mature specimen of *C. Chrysantha* *Microphilia*, beginning to flower, this on October 1. The yellow blooms were typical of *C. Chrysantha* but smaller and more prolific.

At Professor Zhang's sugges-

tion, we spent the afternoon at another of Kunming's spectacular Camellia plantings, the Golden Palace Park. In keeping with the Community's reputation, acres of Camellias covered the hills in this people's park. Our only regret as we left these extensive gardens after an enjoyable afternoon was that we would miss what promised to be a glorious display of camellias later in the season. ♦



Professor Xia Lifang's greenhouse of *C. reticulata* in Kunming. Much research is conducted here.



Mr. and Mrs. John Slyker stand at the entrance of the Friendship Garden in Kunming, China.

Is It Dieback?

C. C. Bush

When I began growing Camellias, I was instructed by my guide and mentor, Luther Brent, to grow japonicas as they were easier to grow than hybrids. He suggested that I start with 'Marie Bracey,' 'Mathotiana,' 'Betty Sheffield' and 'Tomorrow's Dawn.' I followed his advice and enjoyed a degree of success.

Later I inquired of the availability of a beautiful 'Buddha' bloom, and Mr. Brent advised me that it was very difficult to grow. He said that it was susceptible to "dieback." He stated that it was a reticulata, and that they seemed to him to be more likely to develop dieback than did the japonicas. Naturally I wanted to know why. He explained to me that the structure of the stem was softer, the bark more rugose, the cambium layer thicker, the medulla thinner and the pith larger than japonicas. The stem structure was not as resistive to dieback fungus. He advised me to refrain from growing reticulatas and reticulata hybrids. He added that if you must have a reticulata, the 'Crimson Robe' seemed to be less susceptible to dieback than any of the retics which he had tried to grow.

As time passed, I failed to heed the words of wisdom from R. L. Brent and began acquiring more and more of the retic hybrids. The beauty of the blooms obtained justified the risk and the relative short life expectancy of the plant. Having won the best retic hybrid award several times stimulated me to acquire and graft more and more

of them. As the seasons passed, my greenhouse contained as many reticulata hybrids as japonicas.

As the number of retic hybrids increased, so did the dieback or withering of leaves and stems. I used about one pound of benlate and one quart of 3336F per year in an effort to control dieback. I added spreader sticker and

*The problem with
die-back is still
one of the major
obstacles in
growing camellias*

sprayed periodically in an effort to stop or inhibit dieback. I continued to have the symptoms and the branches continued to wither and die. Almost weekly, I pruned out the dead branches and painted the resultant wound with a paste made with two tablespoons of benlate, two teaspoons of captan mixed with one-fourth cup of distilled water to which ten drops of clorox had been added. This paste was generously applied to the wound. I was given the

proportions by John Edwards, as the remedy to prevent dieback from entering the plant. I have never had a dieback canker form on the wound if it had been coated with this paste.

In spite of all the precautions, I still had a problem with branches dying. Each week I pruned out a basketfull of dead limbs, but I noticed the dying limbs always occurred on the retic hybrids. I was not having dieback on the japonicas or the non-retic hybrids.

When the weather starts getting cooler, all of us begin placing our container grown plants between the plants we have growing in the ground in the greenhouse. In the process of moving my plants, I brushed against some of the branches. The limbs of some of the retic hybrids broke off. I noticed that the leaves had started to shrivel as if with dieback. On examination, I found a small borer approximately 1/32 to 1/16 inch in length and white in color with a brown head. In appearance, it was the identical borer which infects peach, apricot, plum and dogwood trees and which resulted in the death of rhododendrons and Exbury azaleas which I had attempted to grow. In retrospect, I don't recall seeing any canker on the main trunk of retic hybrids which is indicative of the dieback fungus. The point of entry for the borer seems to be on the lower side of the branch and is approximately the diameter of a .5 mm lead in a mechanical pencil. Maybe a little smaller - possibly .3 mm lead.

When the branch is flexed, it will break at the point of entry and on close examination, you will see that the pith has been eaten and has turned dark. The borer is in place either on the branch which has broken off, or on the part of the branch attached to the main trunk. With a 5x glass, you will have little trouble locating the culprit unless he has fallen to the ground. In that case I have not located the borer.

On my discovery of the borer, I researched borers as a pest in camellias and was unable to find any reference to borers. I then referred to my FARM CHEMICALS HANDBOOK '93 to locate some chemical which would eliminate borers. My findings indicated to me that Lindane should be sprayed on the trunk and together with Dimethoate or Cygon 2E. The Lindane is a contact killer and Dimethoate a systematic erradicator.

I located a bottle of Lindane at the local Wal-Mart store and Cygon 2E at a local Agricultural Coop. I sprayed the Lindane according to the instructions on the bottle with a pump sprayer and applied the Cygon 2E with a three inch paint roller with a four foot handle attached to the lower four or five inches of each plant in the ground as well as those grown in containers.

Within one week, all further dying branches when examined indicated that the borers had been killed. In ten to fifteen days, I will again spray with Lindane to kill any eggs or infant borers which may be on the plants. I feel that one application of Cygon 2E will last until the blooming season is completed.

Spraying the plants for borers with benlate is like soaking your feet in Johnson's Foot Soap when you have a tooth-ache. It makes your foot feel good, but does absolutely nothing for the tooth-ache.

The problem with die-back is still one of the major obstacles in growing camellias, but in my

situation, what I had erroneously hypothesized to be dieback fungus was a borer which had been responsible for the death of a lot of branches on my retic hybrids. Drying up and death of a branch does not always indicate dieback. My assumption that all dead branches indicated dieback almost resulted in my destroying all of my retic hybrids by treating them with a dieback fungus remedy. As a result of the discovery of borers present on reticulata hybrids and an effective treatment, I think I will try again to grow the very beautiful 'Buddha' and all of its progeny.

Possibly other growers will examine their dying branches to see if they have a borer problem. In the event others have borer problems, then the problem of dieback will be reduced considerably. The expense of borer remedy is not as great as the present fungicide remedy on the market.

In conclusion, it is my belief that borers are responsible for a large amount of dying branches which have been erroneously attributed to the dieback fungus. Borers can be effectively controlled by the use of Lindane spray and Dimethoate insecticides when applied as per the instructions on the container. However, I must emphasize that these are very toxic chemicals and must be applied at the prescribed dilution rate with the required personal protection in use as prescribed in the instructions and precautions statement on each package of Lindane and Cygon 2E. ♦



Future Meetings of the AMERICAN CAMELLIA SOCIETY

February 23-27, 1994
Slidell, LA

March 8-11, 1995
(50th Anniversary of ACS)
Masse Lane Gardens

Spring 1996
Central FL Camellia Society,
Orlando, FL

Spring 1997
Baltimore, MD

Spring 1998
North Georgia Camellia Society
Atlanta, GA

March 3-6, 1999
Sacramento, CA

A DIFFERENT APPROACH IN THE HYBRIDIZATION OF *CAMELLIA NITIDISSIMA* (*C. CHRYSANTHA*)

SOME NEW IDEAS FOR GETTING THE YELLOW CAMELLIA

William L. Ackerman*

* Research Horticulturist (Retired) Agricultural Research Service United States Department of Agriculture.

Fourteen years ago, within a period of three months, seeds of *C. chrysantha* were introduced into Japan, the United States, and Australia. In all three countries, seedlings were successfully grown, quickly followed by successful grafts onto a number of species, including *C. japonica*, *C. sasanqua*, and *C. reticulata*. There were great expectations in those days and numerous predictions that we would have an entirely new range of flower colors among commercial cultivars within five years. What happened? Where are these cultivars?

It is not a case that valid interspecific hybrids involving *C. chrysantha* were not made. I know this, not just from personal experience, but from reading the literature and observing hybrids produced by others. In reviewing the literature, the first report is from Chang Ao-lo and Xia Li Fang⁽³⁾, and I quote: "Since 1973, the crossbreeding work has been conducted by using *C. reticulata*, *C. japonica*, *C. saluenensis*, and *C. pitardii* var. *yunnanica* as **female** parents and *C. chrysantha* as **male** (pollen) parents. Altogether, 3,400 flowers were pollinated and 561 fruits were achieved. Now, more than 500 hybrid seedlings have been achieved."

None of these hybrids possessed the sought after yellow floral pigment! "We used as the **female** parents, the camellias cultivated in Kunming Botanic Institute, and as **male** parents, *C. chrysantha* growing wild in Guangxi, Xia Li Fang⁽³⁾. Other reports include Brown⁽⁴⁾, Donnan

^(6,7), Donnan & Nuccio⁽⁸⁾, Hagiya⁽⁹⁾, Nagao⁽¹¹⁾, Parks & Scogin⁽¹³⁾, and Piet⁽¹⁰⁾. Milton Brown, in a presentation at an ICS Convention in 1985, gave a detailed report of the status of *C. chrysantha* regarding its hybridization and development throughout the United States. Plant breeders, with few exceptions, consistently used standard cultivars as **seed** parents crossed with **pollen** from *C. chrysantha*.

I was especially impressed, while in Japan in 1984 and 1985, with seeing hybrids expressing intermediate characteristics between *C. japonica* and *C. chrysantha* that left little question regarding their validity. Yet, their stalked flowers (another sure indication of *C. chrysantha* influence) showed no real yellow pigmentation. Instead, several of these had a faint orange cast not present in the **seed** parent. This was the teaser to spur us all on to make more crosses. We assumed at the time, that the gene(s) for yellow inheritance were recessive and that sib crosses among the hybrids and/or backcrosses to *C. chrysantha* would bring forth the yellow character in due time. Since then, further tests have indicated that most interspecific F₁ plants are not only extremely pollensterile, but also seed sterile. So, it may be difficult to obtain F₂ generation plants directly from the F₁ plants. Uemoto et al⁽¹⁹⁾.

Yet, in retrospect, the yellow gene(s) was (were) recessive to what? *Camellia chrysantha* is a monocolored species and a wild one at that! No one in China that I know of, has come up with a *C.*

chrysantha with anything other than yellow flowers. Thus, one must assume the species contains no other genes for flower pigmentation and exists in the homozygous state. The next logical assumption is that this yellow gene(s) must be recessive to all color pigment genes (including white) in all of the species it has been crossed with.

Parks⁽¹²⁾ comes to this conclusion, stating: "there is growing evidence that some of the *C. chrysantha* color determining genes are completely recessive (inactive) in combinations with other species. Dr. Shunpei Uemoto first observed this in studying the hybrid between *C. japonica* 'Hatsu-yuki' and *C. chrysantha*, which has none of the yellow flavonoids characteristic of the yellow flowered parent." Considering the facts available, Parks made a reasonable and logical conclusion. However, if true, then all future efforts involving *C. chrysantha* would be futile. Although I may be accused of grasping at straws, I believe there is an alternative. There is a very strong indication that simple Mendelian inheritance is not evident, and perhaps, we are dealing with an entirely different situation.

About this same time (mid 1980's), several claims were made of breakthroughs involving hybrids of *C. chrysantha*, which produced yellow flowers of commercial value. It would appear that these claims were a bit exaggerated. Today, some eight years later, we see no such cultivars in the market.

In my own case, I concentrated

in making crosses between white flowered *C. japonica* cultivars and *C. chrysantha*. I managed to develop a dozen or so purported hybrids but never carried any on to flowering. It was at this same time that locally, we were devastated by a series of exceptionally cold winters that killed most Camellias grown outside in the Washington area. It seemed a bit frivolous to worry about either floral fragrance or yellow color if we could not get our plants to survive the winters. Thus, I abandoned both these projects, giving away the chrysanthas and other tender stock, to ACS and any breeders who requested them. I concentrated my full efforts on developing greater cold hardiness. Now, that I feel considerable progress has been made on the latter, I hope to reassess the options on yellow flower color.

In reactivating a project that I have neglected for ten years, it is best to review what has been done in the interim. Also, to review what has NOT been done. Actually, the latter may be the more important!

First, what has been done. Prominent plant breeders throughout the Camellia world have seemingly exhausted the hybridization possibilities. Crosses have been made using *C. chrysantha* **pollen** on *C. japonica*, *C. sasanqua*, *C. reticulata*, and several minor species. Collectively, many thousands of valid first generation (F_1) hybrids have been developed, but few, if any, possess any clear-cut yellow pigmentation. Some, as previously mentioned, showed a slight orangey peach cast, but nothing significant.

I have a very high regard for both the professionals and amateurs involved. At my age, I have neither time or inclination to try to repeat what they have done. There is little to be gained in

reinventing the wheel!

Now we enter the twilight zone! What follows is highly speculative and I have no proof of its existence. However, since the best efforts of many horticulturists and plant breeders, have apparently failed in the past fourteen years - what have we to lose?

In my own abbreviated work, and the extensive work of others, I have yet to unearth any documentation of the extensive use of *C. chrysantha* as the **seed** parent. Pursel⁽¹⁵⁾ stated: "As of this time, no one in Northern

parent, and it may well be that success will come from using it as a **seed** parent." It would appear that none of us listened!

Yamaguchi⁽¹³⁾ using *C. chrysantha* as the **seed** parent, crossed it with a double white flowered *C. japonica* 'Hakako' and produced the hybrid 'Kiho', a light yellow single tubular shaped specimen. This flower is illustrated on the front cover of the 1990 ICS Journal. Mr. Yamaguchi brought a bloom of 'Kiho' to the 1992 ICS-ACS Convention in New Orleans, where he was one of the

speakers. Afterwards, he very graciously presented me with the bloom for my own research. I can vouch for its yellow color, but unfortunately, I no longer had the proper camellias at home for utilizing it and so I, in turn, gave it to Betty Hotchkiss of ACS Headquarters.

Yamaguchi, Campbell, and Pursel were three of the very few hybridizers to even mention using *C. chrysantha* as the **seed** parent. Most others reported using *C. chrysantha* almost exclusively as the **pollen** parent. This is quite natural. We have sufficient pollen to make

20 or more crosses on other species. Thus, we invariably take the easy way. I should have been suspicious if I had taken more seriously the reports from China when we first obtained the seed back in 1980. I refer to the article by Chang Ao-lo and Xia Li Fang⁽⁶⁾ indicating failure from some 500 hybrid seedlings. Zhang Ao-lo (his correct name) spent twelve months at the U.S. National Arboretum in 1983 as part of a government to government exchange program. He was assigned to my research group and we had ample time to discuss *C. chrysantha*, along with many other things. Their extensive efforts in hybridization for yellow flower color had not produced the desired

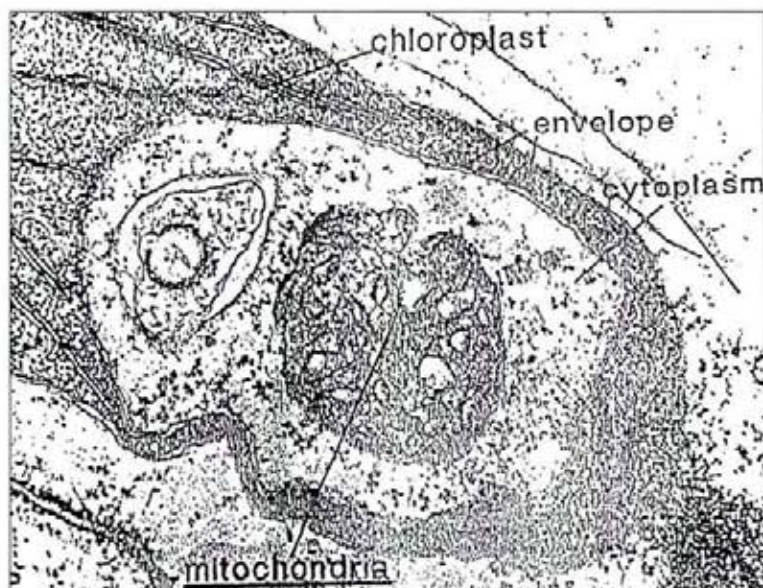


FIGURE 1. Place cell showing an association of mitochondria and chloroplasts. Mitochondria are sometimes found in deep invaginations situated near the periphery of chloroplasts.

California has been able to get a viable take. Reticulata, Japonica, and Hybrid **pollen** has been used on *C. chrysantha* with zero results. Pollinations have been made outdoors and in the controlled environment of the greenhouse. Several times seed pods have formed, but after 60 to 90 days, they have dropped off."

Campbell⁽⁴⁾ discusses the introduction, propagation, and early attempts at hybridizing *C. chrysantha* in Australia. This is much like many others, but he makes one closing statement, which I feel is especially significant: "It appears to the Writer that so far, *C. chrysantha* has only been used as a **pollen**

results. This should have, even then, told us something. However, the fact that valid hybrids had been produced just left unanswered questions. Now, hind-sight makes things a bit clearer.

When we think of inheritance, we normally think of classic Mendelian inheritance involving genes on chromosomes located in the cell nucleus. However, there is a phenomenon called 'non-Mendelian' or 'extrachromosomal inheritance' which is controlled by cytoplasmic hereditary determinants, Rieger et al.⁽¹⁶⁾. Most of us have heard about DNA (deoxyribonucleic acid). This is the stuff that genes are made of which controls inheritance. All DNA is not confined to the cell nucleus. Most specifically, DNA is also present in the mitochondria, the cell's primary energy source (Figure 1). Mitochondrial DNA differs from nuclear DNA. It is ring-shaped, double-stranded, and does not hybridize with nuclear DNA. It thus operates quite independently⁽¹⁶⁾. Finally, mitochondrial DNA is passed on from the female to its offspring, independent from its male partner. Thus, the sexes are not equal in their influence on the next generation. Whereas, the male may contribute half the chromatin (DNA) material of the nucleus, it is the female which supplies the rest of the cell contents, including mitochondrial DNA and fragmental DNA which may be present in the cytoplasm*.

What does all this tell us? Simply, that we can hybridize all we want using *C. chrysantha* as the **pollen** parent, but if the gene(s) for yellow pigment is/are controlled by mitochondrial DNA, we will never transfer this character to the offspring. Only by using *C. chrysantha* as the **seed** parent, can we hope for success.

To complete the picture and make things a bit more complicated, analytical studies have been made of the floral pigments present in the flowers of *C. chrysantha* and its hybrids. Uemoto et al (18,19), Parks & Scogins⁽¹³⁾, Van Schaik⁽²⁰⁾,

Miyamajima et al⁽¹⁰⁾. These have shown that there are two color pigments present in *C. chrysantha* flowers: (1) A most intense yellow flavonoid pigment, **quercetin-7-glucoside**, present in the epidermis and sub-epidermis of the petals; (2) trace amounts of carotenoids in the petal mesophyll tissue (Figure 2).

From the results of these investigations, it may be concluded that the yellow color of the flowers of *C. chrysantha* is attributable to the presence of a flavonol derivative, quercetin-7-glucoside. On the other hand, a small amount of carotenoid may also contribute but only as a minor expression. "Quercetin-7 monoglucoside pigments are distributed but scarcely in the plant kingdom, so we suppose that the pigments will be difficult to introduce into *F₁* hybrid plants," Uemoto⁽¹⁹⁾.

Nothing is known about the inheritance of the two components of petal color in *C. chrysantha*. Dr. S. Uemoto, in studying the hybrid between *C. japonica* 'Hatsu-yuki' and *C. chrysantha*, found none of the yellow flavanoids characteristic of *C. chrysantha*. To date, no hybrid, with or without visible yellow pigmentation in the petals, contained even a trace of the yellow flavonoid pigment, so abundant in the flowers of the *C. chrysantha* parent. Parks⁽¹²⁾.

Now, I plan to stick my neck out and make a hypothesis based on the evidence as I see it. I believe we have two entirely independent genetic mechanisms working here.

First, the carotenoid pigment found in the mesophyll of *C. chrysantha* flowers is controlled by gene(s) located on nuclear chromosome(s) and subject to classic Mendelian inheritance. This is the source of the faint orange or peachy coloration found in some of the *F₁* hybrids where *C. chrysantha* is the **pollen** parent. This has been the teaser that has led us on to believe we were getting close to obtaining a true bright yellow camellia hybrid.

Secondly, the flavonoid

pigments found in the epidermis and subepidermis, which give *C. chrysantha* its true yellow color, are located outside the nucleus in either the mitochondria, the cytoplasm, or both. If we wish to transfer these pigments to the hybrids, we **must** use *C. chrysantha* as the **seed** parent!

It will be such a simple thing to find out if the above hypothesis has merit. Of course, other Mendelian characters, such as flower size, form, etc. would be transferred to the progeny through normal Mendelian inheritance, irrespective of which way the cross is made.

Wait a minute! What about the extreme difficulty the plant breeders in northern California had in making crosses using *C. chrysantha* as the seed parent? I have a theory on this also. *Camellia chrysantha* (like *C. lutchuensis*, etc.) is a tropical species and needs to be treated as such.

Back in the 1960's, when I was working towards floral fragrance using *C. lutchuensis* crossed with *C. japonica*, etc., I found it almost impossible to use *C. lutchuensis* as the seed parent. I could site many other cases where I got vastly different results depending on which direction the cross was made. Ackerman^(1,2). I was working closely with Dr. Robert Cutter, of Oakland, CA at the time, and he was having the same trouble. However, a friend of his in southern California was having no trouble at all. We concluded that perhaps we were too far north in latitude. We assumed it could be either day length or temperature, that was affecting seed formation in *C. chrysantha*. Several years later, we had a heating malfunction in the greenhouse at the U.S. Plant Introduction Station, where *C. chrysantha* was located.

Temperatures during the flowering period ran in the mid to high 80's (more than 15° above our normal 65-70°F), and without any effort on my part, *C. chrysantha* set several dozen open pollinated seed. The plant was shaded by a huge *C. japonica* situated next to it.

What I'm driving at is that if we make environmental conditions as similar as we can to those of *C. chrysantha*'s origin, Xia Li Fang and Kalyun⁽²²⁾, perhaps we will have far less trouble in getting *C. chrysantha* to set seed.

Considering the vast amount of effort and time that has been expended during the past fourteen years with minimal results, wouldn't it now be well worth while for some of us to try out this hypothesis as a new approach? Perhaps there is yellow gold at the end of the rainbow after all if we but take the proper route to get there.

I would greatly appreciate feedback from anyone who may have used *C. chrysantha* as a **seed** parent, and information on the resulting hybrids.

*Incidentally, mitochondrial DNA became a very popular source of study several years ago by genetic evolutionists of the human species, *Homo sapiens*. Mitochondrial DNA samples were taken from women of most of the world's races to determine our basic origins. Both mitochondrial and cytoplasmic DNA are passed from mother to daughter through the generations from earliest times. Although this DNA is also passed from mother to son, it is lost each generation and the son's mate passes it on to their offspring. (This same relationship exists in plants between **seed** and **pollen** parents.) From a study of comparative mutation rates, it was determined that all humans developed from an original 'Eve' in West Africa about 200,000 years ago. These conclusions continue to be challenged by other researchers and it now represents only one of several on-going theories.

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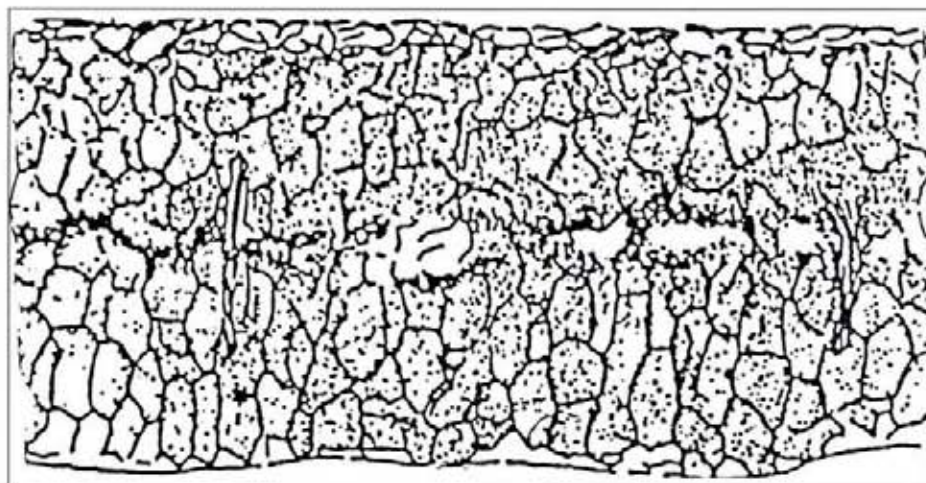


FIGURE 2. Petal cross-section showing the upper and lower epidermis, reported location of intense yellow flavonoid pigments and the spongy parenchyma (mesophyll) location of trace amounts of carotenoids. Uemoto, S. and I. Miyajima(18)

Is A Yellow-Flowered Graft Chimera A Reality?

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Plant hybridizers have been trying to transfer the yellow flower color of several new species introduced from China for more than fourteen years. Efforts have concentrated on utilizing *Camellia nitidissima* (*C. chrysantha*), *C. euphlebia*, and other yellow-flowered species in crosses with a wide range of commercial cultivars. Today, there is very little to show for the many thousands of crosses resulting in hundreds of valid hybrids. None of these hybrids have possessed the VIVID yellow pigmentation characteristic of the *C. chrysantha*. A previous article may help explain this deficiency⁽¹⁾.

Perhaps an alternate way of achieving the desired yellow flower color by completely bypassing the hybridization route, is now worth consideration. That is, through specialized grafting techniques produce a graft chimera* which combines the somatic tissues of two species to produce a composite displaying the desired characteristics of both.

There is a precedent for this seemingly far-fetched proposal. Two examples come to mind. First, and foremost, is that of the cultivar 'Daisy Eagleson', a graft chimera of *C. sasanqua* and *C. japonica*. For those not familiar with it, a brief description follows, and I quote from⁽¹⁾.

" 'Daisy Eagleson' (DE for short) originated in 1954 following a graft made by Tom Eagleson, of Port Arthur, TX, of a

C. japonica scion with dark rose, white blotched, double tiered and sterile flowers onto an understock of *C. sasanqua* 'Maiden's Blush' which has small, delicate pink, single flowers. The exact point of origin of the first DE shoot is not entirely clear, but it showed some characteristics of each of the original components as well as some new ones."

Cuttings of DE were rooted and plants sent to the U.S. Agricultural Research Center, Beltsville, MD, in 1969 and 1970, for analysis. R.N. Stewart et al⁽⁴⁾ determined that the DE is a graft chimera with epidermal tissue from *C. sasanqua* (6n=90), and internal tissue from *C. japonica* (2n=30). I was fortunate to have a close association with the authors and observed the research in progress through to its conclusion. What happened in the case of DE was a fortunate accident in nature. What I will be proposing later are suggestions of how an expert grafter may manipulate his grafting procedures to produce by design a graft chimera with the right combination of tissues.

The second example⁽²⁾ is a colchiploid developed from a sterile camellia hybrid 'Fragrant Pink' (FP for short). Although not the result of grafting, as with DE, it also resulted in a chimera, in this case with epidermal tissue (2n=30) distinctive from internal tissue (4n=60). Fortunately, chromosome examinations were able to clearly distinguish the different tissues in both DE and

FP cases. One wonders how many accidental chimeras may develop that go undetected. That, however, is a whole other subject. What I do want to point out from this second example is that anyone attempting to develop a graft chimera should not expect results from a few well-placed grafts, unless he comes extremely lucky.

The development of the colchiploid 'Fragrant Pink Improved' may serve as an example. Sixty plants of 'Fragrant Pink' that had been rooted from cuttings were grown to 5" pot size and cut back from 18" to 6" in height. Pruning was done so that only 3 branches remained at the base of each plant. Colchicine treatment was begun on the upper three buds of each of 3 branches on 56 plants (4 plants were used as checks). Thus, there were 9 buds treated on each of the 56 plants giving a total of 504 treated buds. From this, two of the colchiploid branches had diploid epidermal tissue and tetraploid internal tissue. One of these was forced into flowering and later named 'Fragrant Pink Improved.'

My point in the above is that it took considerable time and persistence to develop 'Fragrant Pink Improved.' I suspect that developing the proper graft chimera involving yellow-flower color will also not be an easy task.

There is an old saying that "Beauty is only skin deep." This certainly seems to be an appropriate saying for the flowers

*Chimera - a plant composed of tissues of two or more genotypes owing to mutation, somatic segregation, or grafting.

of *C. chrysantha*. Flower pigments analysis studies by Uemoto et al.^(5,6) showed that there are two color pigments present in *C. chrysantha* flowers: 1, A most intense yellow flavanoid pigment (quercetin-7-glucoside) present in the epidermis and sub-epidermis of the petals, and 2, trace amounts of carotenoids in the petal mesophyll (internal) tissue. It is the inheritance of these trace amounts of carotene in valid *C. chrysantha* hybrids that have led hybridizers into assuming true yellow transfer would come shortly. This, however, may be a false hope⁽¹⁾.

What does all this tell us? Simply, that the primary yellow pigmentation of *C. chrysantha* comes from flavanoids located in the petal epidermis. If we can produce a graft chimera similar in nature to 'Daisy Eagleson', then we will have a yellow flower with the size, form, etc. of the commercial cultivar representing the internal tissue.

Does all this sound too good to be true? Is there a catch? Yes, in fact, there are two. First, the business of actually producing such a graft chimera. I will try to explain how I think this might best be done. Second, producing such a chimera is a one shot deal - it will not serve as a breeding parent for future generations of yellow-flowered camellias. Reproductive cells (eggs and pollen) are produced from the plant's internal tissues, not its epidermis. Thus, if we change only the epidermis, it will play no part in subsequent generations.

Now, let's get down to the nitty-gritty of possible ways of producing a desirable graft chimera. One must keep in mind that the basic objective is to graft in such a way as to encourage the development of a shoot to arise from where the union of stock and scion takes place. This quite possibly may be where the callus tissues produced join to

establish the union. Let us start with suggested plant materials. Actually, I believe success may be achieved using *C. chrysantha* and a commercial cultivar interchangeably as either stock or scion. It is only the area of the graft union which is important.

The commercial cultivar, *C. japonica*, *C. reticulata*, *C. sasanqua*, etc. should be either white or very pale pink, and be

*A successful graft
union, and rooting
of a split cutting is
only the first phase
of developing a
desirable graft
chimera.*

of a highly desirable size, form substance, etc. Hopefully, this is what the graft chimera flowers will look like plus having yellow color. Also, for some propagation aspects, it should root readily from cuttings. The other plant material, naturally, will be healthy plants of *C. chrysantha*, or other yellow-flowered species.

Although I have done a reasonable amount of grafting during the past several decades, what I am proposing here goes considerably beyond anything I have ever done. General grafting is one thing, but this calls for very precise bisecting of a dormant bud on both stock and scion and their matching side by side at the graft union.

When I was in the 'thinking stage' on this concept, I decided to do some experimenting with expendable materials to ascertain its practicality. Satisfied that it has

some potential, I next purchased 4 *C. chrysantha* and 2 *C. euphlebia* plants, from Nuccio's Nursery. I have since tried several of what appeared to be the most promising procedures. It is still too early to tell whether these grafts have taken, let alone developed in the manner desired. I will make these preliminary comments. The procedure calls for a very sharp cutting edge, probably greater than that of the average grafting knife. I have tried single-edged razor blades, but they lack sufficient control - a new medical scalpel knife seemed adequate. There is a wide range of specialized knives sold at Arts & Craft stores that could be utilized. It also takes a very steady hand and good vision, possibly aided by a standing magnifying glass. Lastly, it takes considerable practice and I recommend hours of experimenting on expendable materials until one feels he has mastered the technique. The whole point is to cause a shoot to develop at the graft union that is composed of tissues of both stock and scion.

I have illustrated several propagational methods with which I have experimented (Figure 1-A, B, & C). It is quite probable there are others of equal, or better, adaptability. A very good book on grafting is that of R. J. Garner⁽³⁾. The spliced approach graft (Figure 1A), involving container-grown plants is rather confining. I found it more suitable to use the bottle graft variation (Figure 1B), where there is more flexibility with at least one of the pairs. Finally, I resorted to what I call the split-cutting technique (Figure 1C), which gave the greatest degree of control in performing the necessary cuts. Here, it is desirable to have an automatic mist propagation bench for rooting the split cuttings. Also, it is important that the commercial cultivar used be one that roots very readily. Offhand, it seems to

me this is the most practical of the techniques described. I obtained good rooting despite the sever wounding involved. Also, it is the most amenable to a large scale operation.

A successful graft union, and rooting of a split cutting is only the first phase of developing a desirable graft chimera. The next phase requires considerable patience, keen observation, and more than a little luck. Assuming your grafts take, and a good solid union is established, then one must do everything possible to encourage the bisected bud (if still alive) to form a shoot. This may be done by cutting back either of the upper shoots and making a small notch in the other shoot above the bisected bud.

This should force the bud into growth. Do not cut back the remaining shoot until well after the bisected bud has grown.

If the bisected bud has not survived, all is not lost, and steps then should concentrate on adventitious buds developing from somewhere along the union of stock and scion. The procedure would be the same as if the bisected bud survived, except it would concentrate on developing these adventitious buds to the exclusion of other growth. This may well entail rubbing out all other adventitious buds that develop on the rooted cutting.

The third phase follows the growth of a shoot from either the bisectational or selected adventitious bud. The entire shoot may, or may not, be of the desired graft chimera composition. It is just as likely that the epidermis could be of the cultivar and internal tissue *C. chrysantha*. In that case, you may have a single white flower similar to *C. chrysantha* in size and form only. The developed shoot may not be uniform but could be what is called a sectorial chimera*. In this case, it would be advisable, in time, to force lateral shoots and flower each out individually. This was my

experience with the colchiploid²⁾.

***Sectorial chimera** - a chimera in which the distinct genotype tissues are cross-sectionally arranged as sectors of a circle (present in only a pie shaped slice of a cross-section of shoot).

Anyone who approaches Phase Three might well read the detailed procedures illustrated in that article. I have limited copies I will be glad to distribute to serious grafters.

The final proof of success or failure comes with propagating portions of the shoot and flowering them out to see what flowers develop. Using a *C. reticulata* or *C. sasanqua* cultivar would have a distinct advantage over diploid *C. japonica*. Here, like with 'Daisy Eagleson' and 'Fragrant Pink Improved' one could, by their different chromosome numbers, determine cytologically one's success, or failure, without having to wait for flowering.

What I have proposed in this article will not be easy. It will take much patience and perseverance. However, the hybridizers have little to show at this point. Now, maybe some lucky grafter will come up with the golden prize. Anyone is welcome to give it a try with my blessings - we are all in this together to further the Genus *Camellia*! ♦

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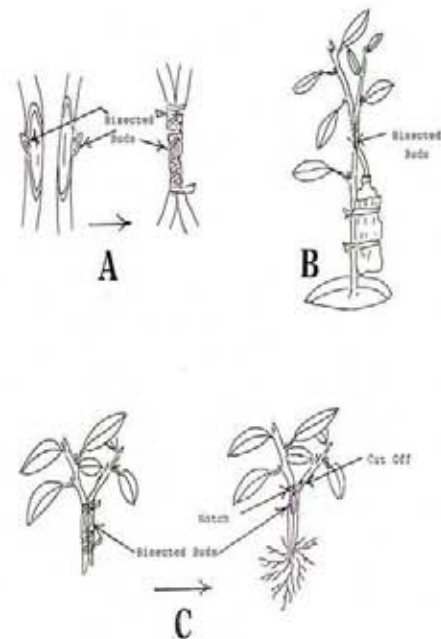
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FIGURE 1A - A Spliced Approach Graft. The sliced cut on both stock and scion is positioned to cut as closely in half as possible, a bud on each component.

FIGURE 1B - Bottle Graft. The base of the scion is kept in water until the union has formed. Small pieces of charcoal in the water tends to keep it clean..

FIGURE 1C - Split Cutting. Treat with rooting hormone and set in propagation bed. After rooting, and when the union has formed, cut one shoot off and notch the other above bisected bud to force it into growth.



Insect and Mite Pests of Camellia

James R. Baker*

*Extension Entomologist, North Carolina State University

In the Southeast, beetles, aphids, mealybugs, plant-hoppers, scale insects, mites and voles attack camellia. Fortunately, plant pests tend to be sporadic in their distributions and often natural control agents in the environment are sufficient to regulate pest populations. From time to time, a pest may become locally abundant and may cause so much damage that pesticide treatments may be warranted.

BEETLES

Rhabdopterus beetles are interesting in that they feed mostly at night and *only on the new* growth of rhododendron, camellia, photinia, and other shrubs in the landscape. The most common beetle in this genus is the cranberry rootworm. They leave characteristic holes in the leaves that are narrow and straight or crescent shaped. Sevin™ or other pesticides should give adequate control of these beetles although such new growth may

be damaged by the pesticides. Mavrik™ insecticide is safe to use on new growth and has the advantage of long residual activity on the leaves. By the time Mavrik™ wears away, the growth will be too old to be attractive to the cranberry rootworm beetles. Although it is relatively expensive, Mavrik™ is used at a rate of one-sixth of one-third teaspoon per gallon of water so that a small container will make many gallons of dilute spray. Only the new growth needs to be treated as this is the only part of the plant likely to be damaged by this pest. Fortunately, insects vary from year to year in their abundance so that it may not be necessary to treat for *Rhabdopterus* beetles each year.

Weevils that attack ornamental plants feed almost entirely on the margins of the leaves. Some weevils have a very damaging grub stage that attacks roots. The Fuller rose beetle is a weevil that does more damage in the adult stage than as a grub in the soil. This weevil tends to feed at dusk

or dark during the summer and early fall. Fuller rose beetle has a pale oblique line along each side.

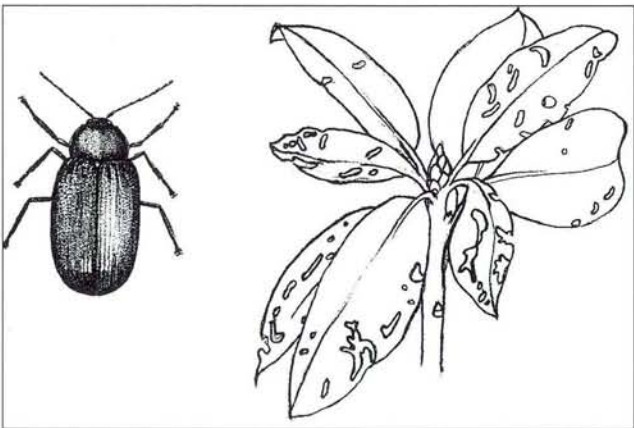
Two banded Japanese weevils tend to have two dark bands across the back. Twobanded Japanese weevils are remarkable because they are resistant to several insecticides

commonly used in the home garden including Sevin™, malathion and diazinon. Fortunately they are susceptible to Orthene™ insecticide that is labeled for home use and has the advantage of being systemic and not very toxic to people. Twobanded Japanese weevils are also susceptible to Mavrik™. Commercial growers and landscapers can also use the pyrethroids Mavrik™, Talstar™ or Tempo 2™ for control.

APHIDS

It is amazing that aphids that are genetically identical can have so many body forms. Through the spring and summer, there are no male aphids, and female aphids give birth to live young. If the aphids are numerous, some of the offspring develop into black, winged forms. Some of the offspring develop into wingless forms that are much paler than the winged ones. When the tiny aphids are first born, they are so small they tend to resemble mites.

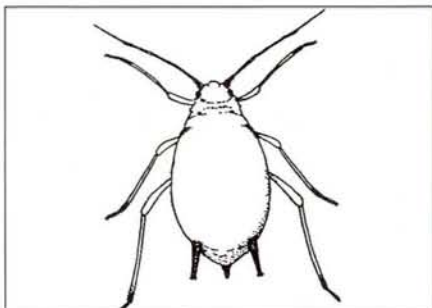
There is one more "form" of aphids that confuses horticulturists: parasitized aphids. After it is stung by a parasitic wasp, the poor aphid becomes bloated and tan in color. Sometimes all of the aphids remaining on a plant may become parasitized giving the impression of an infestation by a "new, tan" species of aphid that is very difficult to control (the immature wasps manage to fasten the aphids to the leaves with silk so that no matter what kind of



Rhabdopterus beetle (left) and its damage to rhododendron.

pesticide is applied, the aphids seem to persist on the plant).

Aphid populations increase dramatically because they reproduce parthenogenetically and



The melon aphid, a pest of the new growth of camellias especially in greenhouses.

because they migrate into new areas from time to time. In warm weather, parasitic wasps, lady beetles, syrphid fly maggots, lace wings and other predaceous insects feed on aphids so that aphid populations often decrease rapidly as well. Aphid populations are sometimes devastated by *Verticillium lecanii*, a fungus that infects aphids as a sort of super athlete's foot disease.

The green peach aphid and melon aphid are pests of camellias and many other ornamental and vegetable plants. They are both resistant to many insecticides. Orthene™, soaps and Oils should give adequate control of resistant green peach aphids and melon aphids.

MEALYBUGS

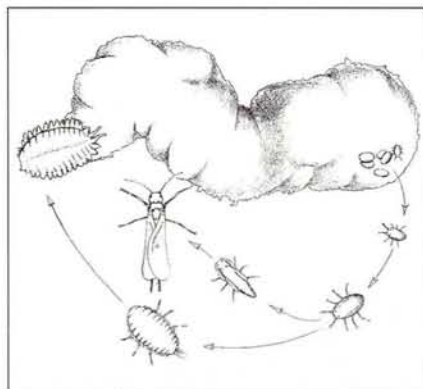
Mealybugs suck out sap and excrete honeydew, a sweet sticky liquid. Most mealybugs lay eggs in a dense, waxy mass called the ovisac. Males pupate in a fluffy cocoon of wax. Infested plants are disfigured by the mealybugs, honeydew, male cocoons, and the ovisacs. Not only that, but as the mealybugs feed, they inject their saliva into the plant. Some plants are very sensitive to the saliva and dieback or become stunted or wilted in appearance when large numbers of mealybugs are feeding.

Control of mealybugs is not easy. If only a few plants are infested,

mealybugs can be removed with a cotton swab dipped in rubbing alcohol. The plant can then be washed with a mild soapy water emulsion to remove residual wax left by the mealybugs (About 2% soap, not detergent). The plants must be observed closely for a few weeks and new mealybugs removed as they appear.

There is a soap actually labeled for use as an insecticide for mealybug control on ornamental plants (Safer's Insecticidal Soap™). This soap is available from garden shops and plant centers. Soaps are popular with some horticulturists because of their relative safety to people. One commonly used insecticide in the home and home garden is malathion (2 teaspoons per gallon of water). Plants can be sprayed thoroughly or dipped into the pesticide mixture. Malathion is a synthetic organophosphate insecticide of relatively low toxicity.

The ovisacs complicate control measures because pesticides do not readily penetrate into the ovisac to kill the eggs. Consequently it is recommended that plants infested with mealybugs be treated at weekly intervals at least twice and probably three times for complete control. This allows time for the eggs to hatch and the new mealybugs to emerge from the ovisacs.

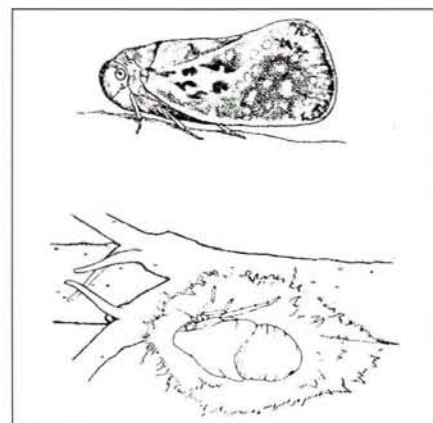


Life stages of the citrus mealybug.

PLANTHOPPERS

Flatid planthoppers are small insects that secrete a fluffy, white residue as they feed. This species is not particularly damaging to ornamental plants although their

presence may be aggravating to horticulturists. Malathion or some other contact insecticide should give adequate control.

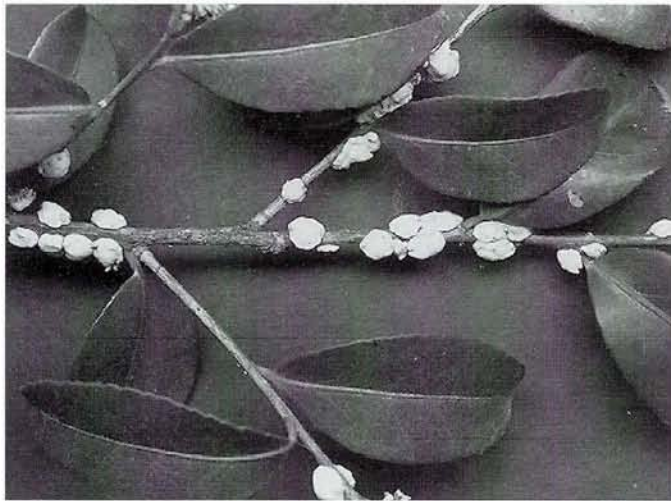


The citrus flatid planthopper (above) and its nymph.

Immatures of *Acanalonia conica* often secrete enough white, fluffy wax that they completely obscure themselves from view. When the nymph is disturbed, it often jumps 12 to 18 inches (hence the name "plantHOPPER"). Planthoppers excrete a sweet, sticky substance called honeydew in which dark fungi grow. These fungi are called sooty molds because infested plants often become dark gray or almost sooty black. Sooty molds are not parasitic on plants, they merely use the plant as a substrate as they develop on the honeydew. Planthoppers are not particularly resistant to pesticides.

SCALE INSECTS: Soft Scale Insects

The cottony camellia scale infests many types of plants in Florida and the tropics. In North Carolina it seems to be limited to camellias, *Taxus*, Chinese holly and jasmine. June is a good time to spray as the lady beetles that specialize on feeding within the egg sacs of cottony scales will have then departed for their aestivating sites. If the scales are sprayed earlier, the lady beetles would be killed but not the cottony camellia scale eggs that are protected by the waxy ovisac the mother scales secrete around the eggs. Consequently, spraying earlier will do more harm than



Indian wax scale insects on the stems of camellia.

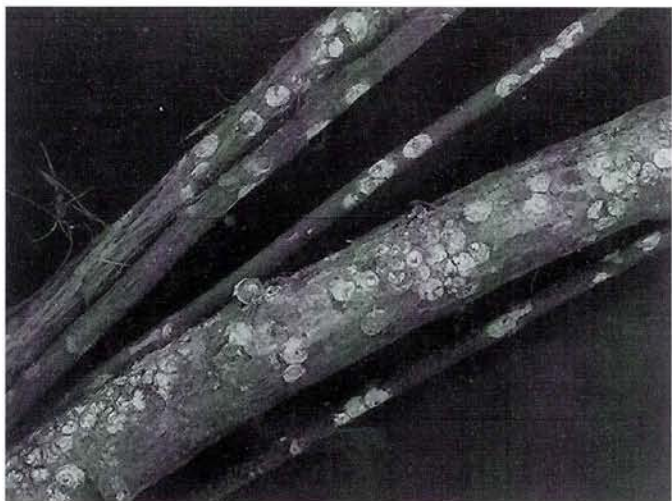
good. In June and July, one of the sprayable formulations of Sevin™ should give wonderful control.

One other soft scale insect pest of camellia is called the Indian wax scale because of its origin in India. This scale is difficult to control from August through May because of its thick, white wax. In June, when the crawlers are out, is the optimum time to spray. Sevin™ will do an excellent job then.

SCALE INSECTS:

Armored Scale Insects

Camellia parlatoria scale insect are armored scale insects. Female scales have oval armor that is dirty brown or brownish gray in color. Males have similar but smaller armor that is more narrowly oval in shape. Ornamental plants seem to be more tolerant of chaff scales than oleander scales. Horticultural



Peony scale insects on the stems of azalea.

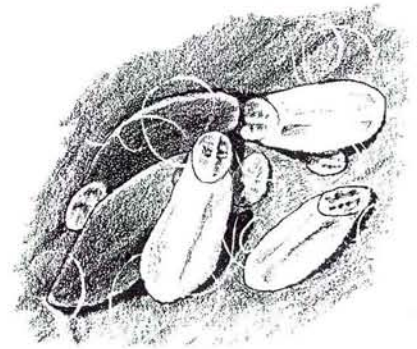
oils are labeled and effective for armored scale insect control on ornamental plants in the landscape and nursery. Apply a horticultural oil on any nice day except when the foliage is new and tender. Use the dormant season rate (usually 4% or 10 tablespoons of oil per gallon of water) during the

winter and the summer season rate (usually 2% or 5 tablespoons of oil per gallon of water) in late spring and summer. Do not spray when tender new growth is present because these new leaves may be burned by the pesticide mixture. Wait a few weeks and give the shrub another application. These two treatments should give you adequate control of these scales. If you notice scale insects on the foliage later in the spring or summer, you should treat again with not more than a 2% mixture of horticultural oil (5 tablespoons of oil to each gallon of water).

Camellia scale insects are armored scales that usually feed on the lower leaf surface of camellias and sasanquas but infest hollies as well. (The major difference between camellia scale insects and tea scale insects is that the male armor of camellia scales is brownish whereas the males of tea scales have snow white armor.) Camellia scales are not particularly resistant to pesticides. Cygon™ gives very good control and one of the horticultural oils can also be used for camellia scale control.

Peony scale can be quite damaging to its host plants.

Infested plants are often stunted and have noticeable dieback. One of the more obvious signs of the peony scale is the lower portion of the armor that adheres to the stems of infested plants long after the upper armor and body of the insect has fallen away. The lower portion of the armor is circular and white (3-4 mm in diameter) whereas the upper armor of the live scale blends in almost completely with the bark. Because the peony scale is an armored scale, the best chemicals for control are horticultural oils or Cygon on azaleas and camellias. Infested plants should be treated with horticultural oil once and again in two weeks or be treated with Cygon.



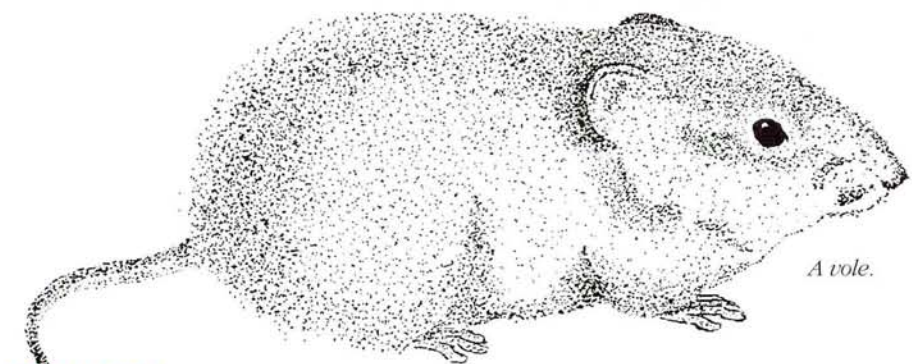
Tea scales showing white males with long, curly, white strands and large, dark females.

Tea scale is a serious pest of camellias and Chinese hollies in the Southeast, but it has also been reported from bottle brush, dogwood, euonymus, ferns, mangoes and other ornamental plants. Infestations occur on the leaves, usually on the undersides. Heavily infested camellias look unhealthy and may drop their leaves prematurely. Tea scale females lay from 10 to 16 eggs each. The eggs hatch in a week to three weeks, depending on the weather. The crawlers emerge and migrate to the newer foliage of the plant and begin to feed. In about two months the new generation of scales matures and they begin to lay eggs. The hatching of the eggs occurs

throughout the year, although development is much slower in cold weather than in warm weather. Cygon™ (dimethoate) and several horticultural spray oils are on the market for the control of tea scale. These sprays should be directed thoroughly to the underside of the leaves. The best time to spray is in the spring after cold weather has passed although it is appropriate to begin applications whenever the scales are first discovered. The oils should be applied once and again in 14 days. Two applications 14 days apart should be sufficient.

MITES

The southern red mite is the most common spider mite pest of camellias, hollies and other broad leaved evergreens in the landscape. It is one of the "cool weather mites." Southern red mites do most of their damage in spring and fall. They are relatively inactive in cold weather and often die out in bitterly cold weather (and very hot weather). Only southern red mite eggs survive these inclement periods. Cygon should give adequate control. The oils are also effective for spider mites but they will not kill the eggs unless applied at 4% during the dormant season of the plant.



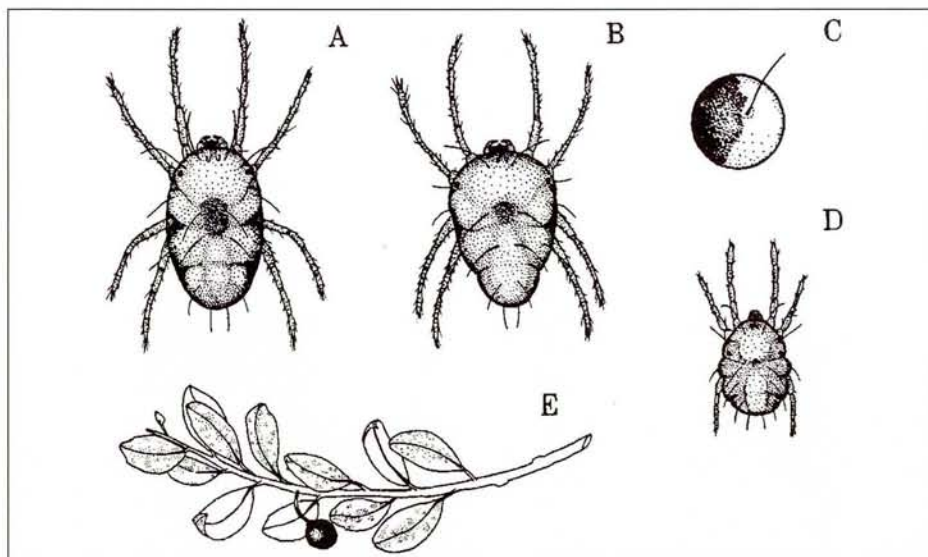
PINE VOLES

Pine voles are small rodents native to the Southeast. Voles damage ornamental plants during the winter and very early spring by consuming the bark and sap wood at the base of the stem or by consuming bulbs and tubers. Occasionally small shrubs are chewed completely off so that the whole plant gently tumbles over! Many times the damage occurs in new subdivisions that were wood lots in the near past. Pine voles sometimes occur in yards that have "natural" areas with thick mulch that provides cover for the voles.

Control of pine voles is not easy since the damage usually occurs before the presence of the voles is discovered. One way to monitor for the presence of voles is to place small boards or other flat objects on the mulch or soil near plants that need to be protected (camellias, ornamental

junipers, fruit trees and other thin barked trees and shrubs). From time to time, place slices of apple under the boards. If voles are present, they will feed on the apples and give away their presence.

Baits and sprays are presently not labeled for home use. In order to use a poisonous bait, the user has to have a permit from the Wild Life Commission. These permits do not seem to be easy to obtain. It would probably be easier to obtain a permit to trap the voles (voles are considered wild life in North Carolina and are thereby protected by state law). Once the permit has been obtained, homeowners can use rat traps or mouse traps for vole control although it requires some ingenuity as voles prefer to remain hidden in shallow runs through the thatch or under pine straw or mulch. The run can be opened and the mouse trap placed across it. Then the trap should be covered with a box to keep it in the dark and to allow the spring to snap shut. The traps should be baited with apple and peanut butter. Vole tunnels do not go deep. It is possible to protect ornamentals by surrounding them with a barrier of hardware cloth 18 to 24 inches wide that is buried about 6 inches deep.



Southern red mite. A, Female. B, Male. C, Egg. D, Larva. E, Damage to Japanese holly.

APPLYING COMMON SENSE TO HELP CONTROL CAMELLIA DIEBACK

Luther W. Baxter, Jr.*

Dieback of camellia continues to be a problem in the humid Deep South. Camellia scions or plants from The West Coast are free of dieback caused by the fungus, *Glomerella cingulata* f. sp. *camelliae*. However, if these scions are mixed in water with scions from The Southeast, they become contaminated by the dieback fungus and grafting becomes a problem. Recent work indicates that soaking scions for one hour or more in a Captan suspension (strength: four level tablespoons per gallon of water) takes care of the problem regardless of scion source.

What is sometimes not clear is that while stock plants from The West Coast are also free of the camellia dieback fungus, those grown for several weeks, or even several months, in a greenhouse alongside camellia stock plants grown in The Southeast allows The West Coast plants to become infected. Either camellia scions or stock plants can become infested or infected. Infested means that spores of the dieback fungus are within camellia crevices or cracks but outside tissue, while infected means that the actual camellia tissue has been invaded by the dieback fungus.

Thus, at the time of grafting a well-stirred Captan suspension (strength as above) should be added to the plant stem just before cutting off for grafting and just after cutting off; and then Captan should be added to the

cleft-graft (stock-split tissue) as scions are set.

Scions used for grafting purposes and which were grown in The Southeast can be soaked in Captan suspension overnight, or even for days, without causing damage to the scion's vegetative seeds. Any flower buds present on scions should be removed. The flower-bud-free scions should then be placed in a Captan suspension for an hour or so before grafting.

At grafting time, the scion's lower one-fourth inch of stem should be cut off. Just before setting the prepared scion into the stock, dip it momentarily in the Captan suspension (be sure to keep the Captan stirred well since it settles to the bottom). All stock plants should be canker free, or at least canker free from the graft union area on down the stem. If a canker is found on an upper stem of a stock plant, then it is essential that Captan be applied to both scion and stock.

A lot of growers are currently using plants for grafting that have been air-layered. If Daydream is the stock plant of choice, make sure there are no cankers on stems to be used for air layering. If dieback is prevalent, spray entire stock plants two to three days before air-layering so that any chance spores of the dieback fungus are killed. This practice should prevent infection from occurring to stems under sphagnum moss.

Recent studies indicated that

cuttings either of *Camellia japonica* or *C. sasanqua* can be taken in June and be expected to root. However, it is desirable to soak these cuttings for an hour or more in a Captan suspension before sticking. Stick cuttings to be rooted in a peat-moss-sand-filled container where the lower one-third of the container is filled with either peat or potting soil and the upper two-thirds (leave lip of pot for watering) is filled with either sterilized creek sand or builder's white sand. Taking cuttings early and attempting their rooting in a clean medium should increase the percentage of rooted cuttings.

However, mid-July cuttings root satisfactorily when dipped in the Captan suspension as mentioned earlier. We have rooted *Camellia japonica*, *C. oleifera*, and *C. sasanqua* cuttings in the greenhouse (minimum temperature 60°F) in late fall and early winter by practicing good sanitation techniques coupled with the Captan treatment.

Marian Edwards at a meeting of the Atlantic Coast Camellia Society suggested that removing camellia stem-leaves of two- to three-year-old plants during the hot summer months is a desirable practice. Since infection by the dieback-fungus spores normally takes place through newly-formed leaf scars during the spring leaf-shed period, the stems should heal well during the hot summer months (June to September) unless during those months there's an extended cool, wet period.

*Professor Emeritus Department of Plant Pathology and Physiology Clemson, SC 29634-0377 December 5, 1993

Conditions within heated greenhouses with its warm temperatures and high humidity are excellent for growth and spore production of the dieback fungus. However, if trickle irrigation is used on these camellias so that foliage and stems are kept dry, this practice should solve most of the problems with spread of the dieback fungus. However, it should be realized that ants can carry fungus spores up and down camellia stems. In that case, applying a good insecticidal spray regularly, such as Malathion, should solve this problem. Always use any chemical additive according to directions, and when recommended by the local land grant university.

Camellia dieback is worse when camellia plants are grown in dense shade, or when plants develop dense growth. Proper overhead shade, such as tall pines with limbs removed many feet above the ground, should reduce infection. Selective pruning to allow air circulation that makes good drying conditions possible should be another useful practice to cut down on infection. However, pruning camellia branches makes open wounds through which infection by the dieback fungus can occur. Thus, do that type of pruning during the fall when conditions for the fungus to infect plants are not good.

Camellias grown out-of-doors

in parts of Virginia, North Carolina, and the Upper Piedmont of South Carolina do not suffer from dieback as the same varieties might in the Charleston, Savannah, Mobile, New Orleans, and Houston areas. However camellia plants with frost cracks in certain sections of the more northerly areas may suffer severely from dieback when early freezes occur (18°F, for example, in November or early December).

While dieback is severe on certain camellia cultivars, such as Ville de Nantes and Adolphe Audusson, these varieties suffer little infection when grown out-of-doors in the Clemson, SC area. This is true even when grown under an overstory of highly susceptible *C. sasanqua* plants. In some cases, camellia cultivars may possess field resistance although they are highly susceptible to the dieback fungus when they are wound inoculated out-of-doors. Planting *healthy plants* in these more northerly areas is the best insurance for keeping them healthy. Large Tiffany plants and a number of Williamii hybrids have grown free of dieback at Clemson for many years.

Other factors affecting camellia dieback are currently being investigated at Clemson.

Using good sanitation practices and good common sense will make camellia dieback easier to control. ♦

JUDGING SCHOOL AT MASSEE LANE

March 5-6, 1994

A Judging School will be held March 5-6, 1994 at Massee Lane Gardens. Those attending will become eligible for certification as an ACS accredited judge. Accredited judges who need to re-certify are encouraged to attend to fulfill this requirement. Experienced ACS Judges will serve as instructors for this class. All participants in the judging school will have the opportunity to serve as judges or novice judges for the camellia show held by the Middle Georgia Camellia Society. A fee of \$25 will be charged to cover the expenses of the school. For more information write Betty Hotchkiss, One Massee Lane, Fort Valley, Ga. 31030 or call (912) 967-2358 or 967-2722. ♦



Publication Deadlines

JOURNALS

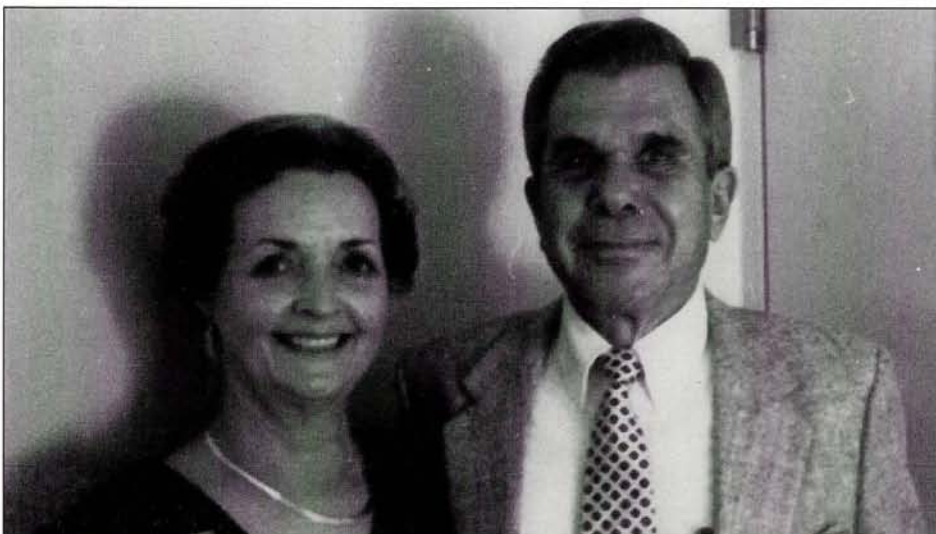
February Issue
December 1

May Issue
March 1

August Issue
June 1

YEARBOOK
August 15

Material received after the above dates often cannot be added. Please cooperate so that the publications may be mailed as scheduled.



Fred and Clara Hahn pause before attending the Saturday night banquet at the Gulf Coast Camellia Society weekend in Mobile. (Photo by Greg Davis)

C A M E L L I A Diseases

Luther W. Baxter and Ronald K. Jones *

Camellia Flower or Petal Blight

Camellia flower or petal blight affects only the open flowers of camellias. It does not affect leaves, stems, roots, non-opened buds or fruit (seed pods). The cause of the disease is a fungus, *Sclerotinia camelliae*, which affects only camellias. It does affect several species of camellia but the fungus is usually active from January 1 through April, coinciding with the normal flowering period of *C. japonica*. Since *C. sasanqua* blooms in the fall, it escapes infection. Buds of *C. japonica*, which are gibbed and thus bloom in the fall, also escape infection.

Most *Camellia japonica* cultivars bloom naturally from January 1 to April 1, depending on location. Along the Gulf Coast they might bloom even earlier than January 1, while in the Piedmont section of the Carolinas they bloom later. Regardless of the time when camellias bloom at their peak, the fungus is active and its growth and spore production is synchronized with this peak blooming period. Activity for the fungus begins with the germination of the fungal survival structure (the sclerotium) which is a black, hard body that generally takes on the shape of the lower part of the old camellia petals. During germination, a structure called a stipe, grows upward until it comes in contact with light at which time the tip expands to form a saucer-shaped

structure called an apothecium. The apothecia are about the color of pine straw and they are usually about one-fourth to one-half inch in diameter. Regardless of the size of the apothecium, (ium, singular—ia, plural) mature spores are produced in the upper surface of this structure and are forcefully ejected into the air currents which

*The fungus is
usually active from
January 1
through April*

distribute them downwind at random. Millions of spores are released periodically from these apothecia over a period of several days. There may be from one to a dozen apothecia that arise as the old ones are expended. The spores are microscopic in size and are vulnerable to various environmental effects which usually restrict their spread to a few hundred yards, but they can be viable up to a mile. The fungus can spread from camellia to

camellia only by wind-borne spores released from apothecia. There are no spores formed on the diseased flowers.

The fungus responsible for azalea petal blight, *Ovulinia azaleae* is a close relative of the camellia flower blight fungus. However, the azalea petal blight fungus produces thousands of spores from apothecia plus spores which are produced on the diseased flowers and can be spread to other azalea flowers. It is this mass of spores which, during favorable environmental conditions (warm, cloudy, moist weather) cause the almost complete, simultaneous collapse of all the flowers on a particular azalea plant.

Two other fungi need to be mentioned, *Sclerotinia sclerotiorum* and *Botrytis cinerea*. Both of these fungi can attack camellia flowers but neither cause the formation of the characteristic sclerotia at the base of the flower. *Botrytis* is a widespread fungus that survives as sclerotia in or on the soil. Its spores are wind-borne and infect the leaves, stems, flowers and fruits of many plants, such as flowers of marigold, stems of snapdragons, leaves of dogwood, as well as strawberry fruit. *Sclerotinia sclerotiorum* is also active during cool weather and it also has a wide host range including the camellia flower. It can be locally serious, but it is rarely seen. It does not produce a

• Luther W. Baxter, Jr. Plant Pathologist, Clemson University (retired). Ronald K. Jones, Plant Pathologist, N.C. State University.

sclerotium at the base of diseased camellia flowers and it does not spread from flower to flower. *Botrytis* can be spread from flower to flower. *Ovulinia* from azalea petals does not affect camellia flowers, and the camellia flower blight fungus (*S. camelliae*) does not affect other plants.

When ascospores of *S. camelliae* are blown to petals of open camellia flowers, they typically germinate and the developing growth of the fungus penetrates the flower and then grows throughout the petal tissue. The affected tissue turns light brown in color, particularly noticeable on the white and pink cultivars. The disease is equally damaging on the red camellia cultivars but it is not as noticeable on these flowers.

Brown spots are formed within 1 to 2 days after infection when temperatures are in the 60s. When the temperature is in either the 40s or 50s the rate of fungal growth in infected camellia petals is greatly reduced so that it may take 3 to 5 days for symptom expression to develop. After a few days, the lower part of the flower is invaded and a ring of mousy gray fungal tissue forms where the flower base was attached to the plant. This represents an important diagnostic feature. After 2 to 3 weeks have elapsed, the base of the affected flower begins to harden and develops into a hard, black sclerotium which either will germinate the following year or remain dormant for several years and then germinate.

The disease affects all cultivars of winter and spring flowering camellias. If one has difficulty diagnosing the problem, then place several flowers suspected of having flower blight in a plastic bag (*without additional moisture*), close the bag and leave it for a couple of weeks. The presence of a hard dark mass at the base of the flower will confirm the problem as being flower blight caused by *Sclerotinia camelliae*. This disease can be distinguished from frost

injury and mechanical injury by the brown color of diseased tissue compared with a whitish to light tan color resulting from frost injury. Severe freeze injury causes about the same color as flower blighted tissue, but all flowers in an area are affected by a freeze whereas some flowers almost always escape flower blight infection.

Certain cultivars, such as Betty Sheffield (all types) spot severely with water which looks very much like the beginning stages of petal blight, but these lesions from water spotting do not continue to enlarge and no sclerotia form. However, this cultivar can be affected by petal blight so observe the flower carefully.

This disease develops progressively, leading to a canker, may kill small stems the first year, while large branches, or entire plants may live more than 10 years after...

No control program for this camellia disease is 100 percent effective. The best program for control is to keep the fungus out of the yard. However, ascospores can be blown in from a neighbor's yard if they have this camellia disease. Ascospores can be blown for about 1 mile.

Picking up and destroying the old flowers is still the best control program for flower blight. On small plants, all flower buds could be removed at one time before they begin to open. Keep all weeds and other plants that furnish any ground cover out from under camellia plants.

Occasionally ground covers are

recommended for growth under camellia plants, such as ajuga, periwinkle, various ivies, *Hypericum* and many other ground cover plants. However, when infected flowers fall to the ground, these plants act as a moist chamber that enhances sclerotial development. If you have camellia flower blight, use pine straw as a mulch. Prune the lower branches so air can circulate freely beneath the plants. This practice permits easy pick-up of the flowers.

Another control procedure is to use chemicals that prevent the completion of the fungal life cycle. These chemicals are applied to the ground surface to prevent the development of the apothecia and the ascospores. These chemicals affect only the apothecium but have no effect on the survival of dormant sclerotia. Sclerotia are resistant to chemicals and also to weather factors such as rain, drought, heat and cold and alternate wetting and drying. Several chemicals have been tested for the control of apothecia by applying them to the soil surface. Two points should be remembered when using any of these materials: (1) a single apothecium can produce millions of spores and so the amount of control achieved by these materials is governed entirely by the thoroughness and effectiveness of the application; and (2) the use of successive applications results in better control because of the good probability of applying the chemicals on spaces missed during the first application. Also, it doesn't matter how well you do the job if your neighbors do not also control the fungus. The best chemical for this use is Terraclora.

Another approach to flower blight control is to cover the soil with some material such as black plastic which physically deters the development of the apothecia (and thus the ascospores) because light is needed to induce apothecial development. This approach is useful for small areas, particularly greenhouses. The material must cover all areas

where the old diseased flowers may have landed.

Still another approach to camellia petal blight control is to spray the flowers and provide some protection during the flowering period. This requires numerous, frequent sprays during the winter and spring and is probably not economical. If you elect to spray, the best fungicide labelled for this use is Bayleton 25 WP.

Sanitation, exclusion and fall gibbing represent the best control methods yet available. There is a great need for a systematic fungicide that can be applied either to the ground or to the foliage which will control this problem for camellia growers.

DIEBACK

Dieback is a poor name for this disease since the stem does not progressively die back but rather a sudden death occurs of an entire branch or of the entire plant. Close observation reveals a canker at a certain point on the stem which has developed from infection that most probably occurred through a leaf scar. This disease develops progressively, leading to a canker, may kill small stems the first year, while large branches, or entire plants may live more than 10 years after the initial infection has occurred. Cankers are usually sunken because the dead cells, killed by the fungus, are surrounded by living cells which continue to grow. Cankers are much harder to see on cultivars that do not form a ridge of tissue around the canker. Eventually, most of the cells in the canker area of the stem are killed limiting the amount of water which can be conducted through the canker area and thus, under stress, the top dies from lack of water. The canker could be considered more like girdling a plant.

Infectious camellia dieback is caused by the fungus, *Glomerella circulata*. Spores are produced on the cankers in the spring of the year when the temperature ranges from about 59° to 77° F and are spread

by splashing rains and insects, particularly ants and flies. When they walk on the moist spore masses, they pick up some of them on their feet and then either crawl or fly to other locations laden with the fungus spores. When they land or crawl on newly created wounds, they leave a few spores of the fungus which are adequate to infect the wounded plant.

With the exception of tea (*Camellia sinensis*), all camellia species tested are susceptible to dieback. Within the species *C. japonica*, there are varying degrees of resistance to infection. For example, the cultivars Professor Sargent, Governor Mouton and Cho-Cho-San are immune to highly resistant, while the cultivars Guilio Nuccio, Ville de Nantes, Tiffany and Mathotiana are very susceptible to dieback. Several thousand seedlings and many cultivars of *C. sasanqua* have been tested over a period of several years and, thus far, none has been found to be resistant, although there are apparently small differences in susceptibility to this fungus. The symptoms on the stem of a *C. sasanqua* plant infected in the spring (May) could develop into a large canker by fall (September or October) or, the canker could girdle and kill the stem. Rarely does the individual canker become longer than about 2 inches. When the bark is stripped away from the canker area exposing the wood, there is chocolate brown dead tissue. The fungus can be recovered from any portion of the dark tissue, but not from the white tissue which is apparently healthy. Under natural conditions this fungus does not affect any other known hosts outside of the genus, *Camellia*.

Natural infection by the spores normally occurs through wounds on the plant stem. Lawn mower or pruning wounds provide excellent avenues of entrance but the most natural is infection through leaf scar wounds. When the leaf falls, the remaining scar is subject to infection for 1 day. This may not

seem very long, but the most likely time for an old leaf to fall off is generally during spring rain. The spores of the fungus are splashed by the rain at random, some landing on newly formed leaf scars. From impact to infection a leaf scar must be wet only 8 to 16 hours depending on the temperature.

Another means of infection is during grafting. During this process, the wood (both scion and understock) is wounded and kept in a very humid environment which facilitates healing of the scion and understock. However, both wounding and high humidity favor disease development. The fungus can grow at temperatures as low as 50°F or as high as 86°F but at both high and low temperatures the growth is slower. This means that, at these temperatures, the infection period is longer than occurs at moderate temperatures, such as 59° to 77°F.

The fungus can also infect cuttings, since wounds are created by cutting the stem and by pulling off the lower leaves. Except on resistant cultivars, such as 'Governor Mouton', infection is usually accomplished very easily when the fungus is applied to any leaf scar or wound.

Here are some steps for control:

1. Grow *C. sasanqua* or *C. oleifera* understock from seed rather than from cuttings. Isolate the seedlings from diseased plants.
2. When collecting scions or cuttings, collect them from healthy plants.
3. Soak scions (or cuttings) in an appropriate fungicidal suspension for 30 minutes just prior to sticking. Captan is frequently used for this.
4. Stick cuttings in sterilized sand away from any possibly diseased plants.
5. Plant the cuttings or grafts in partial shade (pine is excellent) and keep them properly pruned so that air can circulate freely.
6. When beginning with camellias avoid highly susceptible

cultivars such as 'Ville de Nantes' and 'Tiffany'. Instead, use highly resistant cultivars such as 'Governor Mouton' and 'Professor Sargent.' All *C. sasanqua* cultivars thus far tested are susceptible, but 'Mine-no-Yuki', 'Setsugekka', 'Daydream', 'Apple Blossom' and 'Maiden's Blush' appear to have some resistance.

7. Do not plant newly acquired healthy cultivars near diseased plants.

8. When dieback and/or canker are seen on branches or the main stem, cut out all of the affected tissue (all dark wood) and destroy it.

9. Spray camellia plants with an appropriate fungicidal suspension (Captan) just after pruning or after cuttings and scions are removed.

10. Spray camellia plants with an appropriate fungicidal suspension (Captan) during the period of maximum leaf fall.

11. Control insects such as ants with insecticides because they carry the spores from cankers on the stem to the top parts and can carry them directly to the leaf scars.

12. Avoid over-crowding and over-fertilization, particularly with high nitrogen fertilizers.

13. Do not use overhead irrigation during April, May and June on greenhouse grown plants or during May or June on outdoor plants. Overhead irrigation provides a method of spreading the spores to leaf scars where the leaves have recently fallen.

By following these practices, one can reduce dieback and canker, but it is doubtful one can ever completely eradicate this problem on camellias in the South.

LEAF GALL

Camellia leaf gall is a fungus disease that has but one life cycle per year which occurs during late April or May (perhaps slightly earlier in the southern states). Leaf gall, caused by the fungus *Exobasidium camelliae*, affects

Camellia japonica. *Exobasidium camelliae* var. *gracilis* affects *C. sasanqua* and occasionally *C. oleifera* (not to be confused with the *C. sasanqua* cultivar, Narumigata, which is often called "oleifera"), and some hybrids such as Valley Knudson (*C. saluenensis* x *C. reticulata* 'Buddha'). The form of *Exobasidium* that affects *C. japonica* will not affect *C. sasanqua* and vice versa. Also, *Exobasidium vaccinii* that causes leaf gall of azaleas and rhododendron will not attack camellias. Other species of *Exobasidium* also cause leaf and shoot galls on other ornamental and wild plants.

The very distinctive symptoms are characterized by thick, fleshy leaves. Most leaves in a developing vegetative bud are affected, but occasionally only one or two leaves, or parts of a few leaves, are affected. The optimum time for symptom expression is May, although the time may vary from location to location. Galls on the affected buds develop at about the time of normal new vegetative growth in the spring. As the galls mature, the lower side of the leaf (lower epidermis) breaks away, exposing the white mass of spores on the surface which are then either wind blown or spread by splashing water. The disease may be very alarming to the grower, but it rarely is damaging except from an aesthetic point of view.

Control involves one of two approaches. First, physical control involves removing and destroying all the galls as soon as detectable. It is difficult to find *all* the galls, but this is absolutely necessary in order to control this disease. (One other problem, your neighbors must also cooperate since the spores can be blown in from outside your yard.) Secondly, chemical control involves the use of fungicides during the spore production period. Our knowledge about control of this disease by chemical means is not satis-

factory, but usually spraying with a fungicide (maneb) will help. About 3 to 4 sprays applied during May and June should help to control the disease.

VARIATION

It is common knowledge that camellias have either solid-colored or variegated leaves. Variegated leaves are normally green with yellow mottling or splotching. More spectacular than variegation of the leaves is variegation of red and pink flowers. Many cultivars are sold as either solid colored flowers or as variegated such as Adolphe Audusson and variegated, Burgundy Queen and variegated, Carter's Sunburst Pink and variegated, Diamond Head and variegated or DonMac and variegated. There are two types of variegated flowers. They are infectious (virus-induced) and non-infectious (genetic). In the virus-induced, infectious type, the variegation is irregular and may be slight to severe. In white-flowered cultivars, it is impossible to destroy color because white represents the absence of color and thus there is no flower color to destroy. Most virus diseases of plants are harmful but the severity varies from virus to virus as well as the effect of a given virus from host to host.

The virus that causes camellia variegation affects *Camellia japonica*, *C. sasanqua*, *C. oleifera*, *C. reticulata*, *C. hiemalis*, *C. sinensis* and camellia hybrids. There are probably many more *Camellia* species susceptible to infection by the virus. Virus of camellias in this country is spread during vegetative propagation. There seems to be one exception to the above which is as follows: a solid colored camellia growing alongside a variegated one will sometimes make a root graft and under these conditions the solid one becomes variegated. The virus responsible for this type of variegation (irregular mottling and chlorotic splotching) moves throughout the root system of the

affected plant and enters the root system of the non-affected plant through the root graft and from there goes throughout the roots, stems, leaves and flowers and becomes systemic (meaning throughout the system).

Another means of spread is to use a variegated scion on a solid understock. If a union occurs and then the scion dies, the new growth of the understock (for example, a *C. sasanqua* cultivar) will be systemically infected. Therefore, any cuttings and/or scions taken from this infected plant will then be passed on to the cuttings or graft.

The virus is not transmitted through the true seed so that *C. sasanqua* seedlings make good understock since they are virus-free and resistant to root rot (caused by *Phytophthora cinnamomi*). The presence of virus in the scion or cutting does not affect either its grafting or rooting capabilities. Once a plant is systemically affected by a virus it usually remains infected for the remainder of its life although the virus is not equally distributed throughout the plant and symptom expression is variable.

There are several strains of the virus. Some may variegate the leaves but show very little symptom expression on the flowers, while others may show symptoms beautifully on the flower but very little if any symptoms on the leaves. Four virus strains have been reported and there may be others. The symptoms may be so severe that the leaves sunburn and then drop off. If such is the case, some of the defoliated branches may show dieback, but this type of dieback should not be confused with dieback caused by the fungus *Glomerella cingulata*, which kills, not by defoliation, but by destruction of conductive tissue.

As mentioned earlier, variegation of camellia flowers can be caused by genetic variability. Some cultivars, such as 'Herme' and 'Lady van Sittart,' have variegated flowers but the dif-

ference is in the pattern. The flower color is regular and appears more as regular stripes throughout the flower rather than irregular white blotches mixed with irregular colored parts of the flower. In this case, one flower of a specific cultivar such as 'Herme' (of a specific type) looks very much like all of the other flowers on that particular cultivar.

Virus variegation may be considered harmful if it causes the loss of the original solid colored scion. However, infection of a cultivar such as 'Adolphe Audusson' by the virus, may greatly enhance the beauty of the flower.

ROOT ROT

Root rot of camellias, particularly *Camellia japonica*, is caused by the fungus *Phytophthora cinnamomi*. This fungus attacks many ornamental plants plus various pine species, particularly short leaf pine, *Pinus echinata*, causing little leaf disease. Several pine species are used as partial shade for growing camellias and this is highly desirable since camellia do better in shade of this type. Thus, the pathogen may already be present in the soil when camellias are planted. It can also be a serious prob-

lem in container grown plants.

Camellia plants with *Phytophthora* root rot show symptoms of general decline, low vigor and lack normal dark green foliar color. Such plants often show symptoms of twig dieback that can be confused with the dieback or canker disease caused by *Glomerella cingulata*. Plants of any age can be attacked. Infected plants die gradually over several years or may die completely in just a few weeks. When above ground symptoms become apparent, the root system is often completely destroyed.

Since *Camellia sasanqua* is highly resistant to *Phytophthora* root rot, it has been a standard practice for many years to graft other camellia species onto *Camellia sasanqua* seedling root stocks. Due to the high cost of grafting plants, many nurseries at present produce camellias from cuttings. Plant susceptible cultivars in well drained soil or raised beds. Purchase disease free plants. If the problem is serious, consider planting in another location or drench with Subdue or Aliette.

Editor's Note: This outstanding lecture was presented at the Atlantic Coast meeting by Dr. Jones.



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THE RESPONSE OF HIGO *Camellia* Cultivars To The *Camellia* Dieback Fungus

Luther W. Baxter, Jr.*

Charles Cruickshank and Betty Cruickshank**

I. INTRODUCTION

Higo camellias are either cultivars or a strain of *Camellia japonica*. The flowers are described in Nuccio's retail price list (1993-94) are beautiful, single-plum-blossom-style flowers with flared stamens. They are of excellent texture and each flower falls intact (gamopetalous corolla). The plants are excellent for landscaping and they bear a bountiful supply of flowers. Higo cultivars were much appreciated by Japanese royalty.

Some *Camellia japonica* cultivars, like most *C. sasanqua* cultivars, are very susceptible to the camellia dieback fungus, *Glomerella cingulata* f. sp. *camelliae*. This work was done to find out whether or not Higo cultivars are seriously affected by the dieback fungus.

II. MATERIALS AND METHODS

Six plants each of the following Higo cultivars were selected for this work: Gosho-Zakura, Jitsu-Getsu-Sei, Kumagai, Mangetsu, Mikuni-No-Homare Red, and Nioi Fubuki. They were planted November 20, 1992 in Fafard's Mix (No. 3) and fertilized with Osmocote Plant Food, 18-6-12 analysis.

Plants were sprayed and irrigated as needed. The only plants that died from transplanting were three Mangetus, and the remaining three grew very slowly, so this

cultivar was not used in this study.

Wounded-stem inoculations were made March 19, 1993 and results were read August 26, 1993. All plants were greenhouse-grown for the study.

III. RESULTS AND DISCUSSION

Infection took place on all 30 inoculated plants (Table 1) while 29 stems of 30 plants wounded but not inoculated (Table 2) healed completely.

Variation occurred among canker sizes that had formed on plant stems from wound inoculations with the dieback fungus. However, the length of healed lesions exhibited by control plants (not inoculated but wounded) had much variation.

The Higo cultivars Jitsu-Getsu-Sei and Kumagai had larger cankers on the average although there was variation among plants of these cultivars.

Since Higo cultivars were much appreciated by Japanese emperors, it is probable that, through time cultivars highly susceptible to dieback were discarded and only cultivars with some resistance (or field resistance) were grown.

All Higo cultivars which were subjected to the camellia root rot organism (*Phytophthora cinnamomi* Rands) were severely affected under field conditions (unpublished). A virulent form of this fungus was isolated by

standard laboratory techniques from higo-infected roots.

Higo plants are cultivars of *Camellia japonica* based on appearance and susceptibility to both the root rot fungus and the dieback fungus (*Glomerella cingulata* f. sp. *camelliae*) as are most *C. japonica* cultivars.

Higo plants were planted outside at Clemson, SC under slash pine shade in early October, 1993. Whether or not these cultivars are cold hardy is unknown.

While Higo cultivars are moderately susceptible to the camellia dieback fungus, and highly susceptible to the root rot fungus, the same horticultural practices applied to standard *C. japonica* cultivars should be adequate for growth of Higo cultivars. Unfortunately, no experimental data are available on cold tolerance of Higo cultivars as of fall, 1993.

IV. CONCLUSION

Overall, Higo cultivars seem to have about the same level of resistance to the dieback fungus as most other commonly-grown *C. japonica* cultivars. It is not known whether or not Higo cultivars have field resistance to the dieback fungus at Clemson, SC, as do most commonly-grown, *C. japonica* cultivars, and further, the response of Higo cultivars to cold is unknown.

Thanks are extended to the American Camellia Society for part of the funds used in this study

* Professor Emeritus, Department of Plant Pathology and Physiology, and volunteer of the S. C. Botanical Gardens

** Volunteers, S. C. Botanical Gardens.

Table 1. Response of Five Higo cultivars to wound inoculations with the dieback fungus (*Glomerella cingulata* f. sp. *camelliae*. TREATED (Inoculated)

Higo Cultivar	Canker size (millimeters)						Average
Gosho-Zakura	<u>15</u> ,	<u>18</u> ,	25,	<u>18</u> ,	<u>19</u> ,	<u>16</u>	18.5
Jitsu-Getsu-Sei	22,	50,	23,	20,	20,	16	25.1
Kumagai	30,	30,	28,	15,	20,	27	25.0
Mikuni-No-Homare Red	<u>25</u> ,	<u>24</u> ,	<u>15</u> ,	<u>16</u> ,	<u>19</u> ,	22	20.1
Nioi Fubuki	21,	25,	<u>13</u> ,	20	<u>16</u>	18	18.8

Underlined one time - healed

Underlined twice - healing

Table 2. Response of five Higo cultivars to wounding but not inoculated with the dieback fungus (*Glomerella cingulata* f. sp. *camelliae*. CONTROLS (not inoculated).

Higo Cultivar	Wound size (controls)* [not inoculated]						Average
Gosho-Zakura	20	17	15	18	17	15	17.0
Jitsu-Getsu-Sei	20	17	20	18	15	15	17.5
Kumagai	15	25	20	13	18	15	17.6
Mikuni-No-Homare Red	15	17	20	17	15	16	15.7
Nioi Fubuki	19	17	19	15	13	18	15.7

*All healed satisfactorily, though one wound on one plant was slightly slower in healing.

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Basics For The Beginner

PRUNING YOUR CAMELLIAS

Betty Hotchkiss

For the new camellia grower, no cultural task associated with growing camellias appears any more difficult than that of pruning. Many new camellia growers begin with small plants which grow slowly. Therefore, they hesitate to prune these in order to achieve maximum growth. After a few years of growth, these plants may become scraggly with weak, twiggy growth instead of the vigorous growth which is desired or they may become misshapen. Other new camellia growers may avoid pruning for the opposite reason. They have bought or inherited a home with large, old plants. The mere size of these plants, which may reach up to 20 feet tall, is too intimidating to even begin considering pruning.

When pruning a plant, what is desired? According to many experts, the ideally pruned, mature camellia is one with an interior completely free of twigs and foliage, with lower limbs pruned clear of the surrounding soil. The outer perimeter of the plant will then become more dense and symmetrical. In addition to an improved appearance, the plants will be given greater health and vigor. It is wise to bear in mind, however, that it may not be possible to accomplish this in a single season, especially with large, long-neglected plants.

There are two primary reasons for pruning camellias. One is to improve the health and vigor of the plant; the second is to improve the appearance of the plant. To improve the vigor of a camellia, it is necessary that one be able to determine the difference between good, vigorous growth and wood which

should be removed for the benefit of the plant. Twigs which are found in the interior of the plant are often long and leggy with leaves found only at the tip end of the branch. No amount of fertilization will restore this to healthy vigorous growth. It is only by vigorous pruning that this plant can be restored to the desired condition. Pruning to maintain the appearance of the plant may vary somewhat with the grower. Some growers prefer to prune plants to a height no taller than their head so that they may cut and enjoy the blossoms more easily. Others prefer to let the plants reach a more mature height of 10-15 feet for a more impressive display in their landscape. If camellias are planted next to a building it may be necessary to prune more severely to keep the plant from outgrowing the location.

Pest control is closely tied in with pruning. An observer will notice how scale is favored on branches near the ground and those in the interior of the plant. Removal of these branches will help to eliminate the problem. Good air circulation will help to reduce the problem. Pruning will also allow the pesticide spray to better reach the interior surfaces of the infested plant. Low growing limbs are also removed because any flowers produced so close to the ground may be ruined by the splashing of dirt and mud.

If a very large plant needs pruning for any of the above reasons, it may be necessary to accomplish this in more than one season. Careful examination of an old plant will show where to prune. Each branch should be examined from the outer end

back to the main trunk for a vigorous shoot. If such a shoot is found the branch should be removed just above this shoot to allow for new growth. If the plant is in such poor condition that good shoots cannot be found, then you should remove a good portion of the poor branches and wait to see where the new growth emerges. Often after drastic pruning such as this there will be a large number of small shoots sent out. These should be thinned out to allow for optimum development. Drastic pruning may be done to cut the plant back to a height of approximately three to four feet. Much new growth will be produced because the root system will try to achieve a balance between shoots and roots.

If for some reason the root system of a plant has become damaged, it may be necessary to prune the plant rather severely in order to maintain this balance between shoots and roots. This may be true when plants are in pot culture and some roots are killed due to drying out or to freezing. This is also true in cases of transplanting. Many roots are usually lost in this situation and the top of the plant should be cut back to compensate.

Once you have made up your mind to prune, you need to invest in the proper tools. A good pair of hand clippers is a must. Also, some loppers are needed to cut the branches which are larger in diameter. For pruning very large camellias, a good hand saw is used. With the exception of pruning back old, large plants the cuts should be made close to the branch with no dead stubs left. Cuts may also be made just above a new growth bud.

Pruning is a task usually faced

in the Spring. Once the flowering has ended, it is time to prune. If you prune before new growth emerges, it will allow the energy of the plant to focus on the desired new growth. However, pruning can be accomplished throughout the year. Bear in mind that pruning after the end of May will in all likelihood remove some of next year's flower buds. Some light pruning can and should be done throughout the year. When cutting flowers for display, do a little pruning at this time. Any time that dead or injured limbs are noticed on a plant they should be removed. Heavy pruning is not recommended in the fall as plants will respond by putting out new growth which may not have time to harden before cold weather.

Good sanitation should be practiced when pruning plants. Utensils should be clean and may be sterilized in a fungicide solution between plants to prevent spreading of disease. The fungus which causes camellia canker and dieback is active in the springtime when temperatures begin to warm and humidity is high. This fungus is a wound invader and can be a problem after pruning. It is a good practice to spray plants with a fungicide solution after pruning to prevent the fungus from entering these wounds.

As a beginner, do not be afraid to prune your camellias. They respond beautifully and will reward you with vigorous, new growth.



WANTED: Plant or scion of *C. japonica* 'Kathryn Funari' and 'Madame Picouline'. Robert Ehrhart, 2081 Norris Road, Walnut Creek, CA 94596. Phone (510) 934-6117.

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SHOW REPORTS

(Reports of ACS Cooperative Shows In each report, the words *C. reticulata* include those hybrids with *C. reticulata* parentage. Also in each case, the *C. hybrid* means all those hybrids with other than *reticulata* parentage. *C. sasanqua* includes related species)

FLORIDA

FORT WALTON BEACH, November 13, 1993

Sponsor: Fort Walton Camellia Society

Number of Blooms Displayed: 429

Attendance: 1000

Most Outstanding Bloom In Show: 'Pleasant Memories', James and Elaine Smelley

C. japonica: (In Open)

Very Large: 'Carter's Sunburst Pink Var.', Jim Newell

Runner-up: 'Pirates Gold Var.', Jim Newell

Medium: 'Betty Sheffield Sup.', Walter M. Creighton

Runner-up: 'Cherries Jubilee', Walter M. Creighton

Small: 'Little Babe Var.', Jim Newell

Runner-up: 'Little Babe', Jim Newell

Miniature: 'Frances Councill', James B. Young

Runner-up: 'Fircone Var.', Ed and June Atkins

C. reticulata:

In Open: 'Pleasant Memories', James & Elaine Smelley

Runner-up: 'Massee Lane', Walter Creighton

C. hybrid:

In Open: 'Julie', Jim Newell

Runner-up: 'Mona Jury Var.', Jim Newell

C. sasanqua:

Best Bloom: 'Star Above Star', Jim Newell

Best White Bloom:

'Ivory Tower', James and Elaine Smelley

Runner-up: 'Lucy Stewart', Jim Newell

Best Large Bloom By Novice:

'Mathotiana Var.', J. Petty

Best Medium Bloom by Novice:

'Debutante', Thurston L. Hurt

Best Small Bloom by Novice:

'Pink Perfection', J. Petty

GOLD CERTIFICATES:

In open, won by: Jim Newell

SILVER CERTIFICATES:

In open, won by: Ed Atkins

TRI-COLOR CERTIFICATE:

Won by: Mrs. J. H. O'Donnell

CREATIVITY CERTIFICATE:

Won by: Glenda Evans

NUMBER OF ACS MEMBERSHIPS SOLD: None

JACKSONVILLE BEACH, December 4, 1993,
12th Annual Show

Sponsor: Island of Beaches Camellia Society

Number of Blooms Displayed: 827

Attendance: 1000

Most Outstanding Bloom In Show: 'Miss Charleston', Harold Goforth

C. japonica: (In Open)

Very Large: 'Silver Lace', Lillian & C. M. Gordy

Runner-up: 'Easter Morn', Lillian & C. M. Gordy

Large: 'Florence Stratton', Lillian & C. M. Gordy

Runner-up: 'Debutante', Carol & T. L. Everett

Medium: 'Mary Alice Cox', Lillian & C. M. Gordy

Runner-up: 'Han-Ling Raspberry', Lillian & C. M. Gordy

Small: 'Happy Birthday', Lillian & C. M. Gordy

Runner-up: 'Berenice Boddy', Mary Dillard
Miniature: 'Fircone', Lillian & C. M. Gordy

C. reticulata:

In Open: 'Dr. Clifford Parks', C. M. Gordy

Runner-up: 'Harold L. Paige', C. M. Gordy

C. hybrid:

In Open: 'My Diane', C. M. Gordy

C. sasanqua:

Best Bloom: 'Star Above Star', O. L. Jacobson

GOLD CERTIFICATES:

In open, won by: O. L. Jacobson

SILVER CERTIFICATES:

In open, won by: Lillian and C. M. Gordy

CREATIVITY CERTIFICATE:

Won by: Marie and Ray Hall

NUMBER OF ACS MEMBERSHIPS SOLD: Four

GEORGIA

ALBANY, December 4, 1993

Sponsor: Albany Men's Garden Club

Most Outstanding Bloom In Show: 'Show

Time', Dr. and Mrs. Dan Nathan

C. japonica: (In Open)

Very Large: 'Lady Eva', Stuart Watson
Large: 'Tomorrow Park Hill',

Mrs. Spencer C. Walden, Jr.

Medium: 'Herme', Paul B. Robertson

Small: 'September Morn', John Sherman

Miniature: 'Francis Councill', Anne & Bob Gramling

C. japonica: (Protected)

Very Large: 'Elizabeth Weaver', Frank Houser

C. reticulata: (Includes hybrides with *reticulata* parentage)

In Open: 'Dr. Dan Nathan Supreme', Marvin & Ruth Jernigan

C. hybrid: (with other than *reticulata* parentage)

In Open: 'Delores Edwards', John Newsome

Best White Bloom:

'Swan Lake', Frank Jamison

Best Red Bloom:

'Dr. Clifford Parks', Frank Jamison

Best Bloom by Member Men's Garden Club:

'Professor C. S. Sargent', Mr. & Mrs. Kenneth Painter

Best Seedling or Mutant:

'Kathryn Spooner', R. B. Gramling

GOLD CERTIFICATES:

In open, won by: R. B. Gramling

SILVER CERTIFICATES:

In open, won by: Stuart Watson

NUMBER OF ACS MEMBERSHIPS SOLD: One

MASSEE LANE GARDENS, November 13-14, 1993, 21st Annual

Sponsor: Middle Georgia Camellia Society

Attendance: 2000

Most Outstanding Bloom In Show: In open: 'Mary Agnes Patin', Lillian & C. M. Gordy

Protected: 'Terrell Weaver', Annabelle Fetterman

C. japonica: (In Open)

Large: 'Moonlight Bay', Donna & Bill Shepherd

Medium: 'Campari Var.', Lillian & C. M. Gordy

Runner-up: 'Gus Menard', Lillian & C. M. Gordy

Small: 'Tom Thumb', Dr. Daniel E. Nathan

Miniature: 'Little Michael', Lillian & C. M. Gordy

C. japonica: (Protected)

Large: 'Nuccio's Pink Lace', Jim Pinkerton
Runner-up: 'Charlie Bettes', Mr. & Mrs. Oliver Mizzell
Medium: 'Nuccio's Gem', Curt Smith
Runner-up: 'Mary Alice Cox', John Newsome
Small: 'Dahlohnega', Annabelle Fetterman
Runner-up: 'Ave Maria', Dr. David Scheibert
Miniature: 'Itsukamachi', Dr. David Scheibert

C. reticulata:

In Open: 'Valentine Day', Parker E. Connor
Runner-up: 'Betty Ridley Var.', Anne & Bob Gramling
Protected: 'Frank Houser', Mr. & Mrs. Oliver Mizzell
Runner-up: 'Massee Lane', Anne & Bob Gramling

C. hybrid: (In Open)

Very Large: 'Mary Phoebe Taylor', Ann & Bob Gramling
Runner-up: 'Rose Bouquet', Dr. Dan Nathan
Medium Large: 'Julie Var.', Parker E. Connor, Jr.

C. hybrid: (Protected)

Very Large: 'Mona Jury Var.', Annabelle L. Fetterman
Runner-up: 'Joe Nuccio', Bill & Sally Hardwick
Medium Large: 'Freedom Bell', Dr. David Scheibert

C. sasanqua:

Best Bloom: 'Our Linda', Annabelle Fetterman
Runner-up: 'Showa-No-Sake', Mr. & Mrs. Paul Dahlen

Best Bloom By Novice:

'Woodville Red', Mr. & Mrs. Hillary Perdue

GOLD CERTIFICATES:

Won by: Parker E. Connor

SILVER CERTIFICATES:

Won by: Lillian & C. M. Gordy

TRI-COLOR CERTIFICATE:

Won by: Marthann Hudson

CREATIVITY CERTIFICATE:

Won by: Evelyn Adams

NUMBER OF ACS MEMBERSHIPS SOLD: One

VALDOSTA GARDEN CENTER, Patterson Street, November 20-21, 1993, 29th Annual Show

Sponsor: Valdosta Camellia Society and First State Bank & Trust Co.

Number of Blooms displayed: 891

Attendance: 125

Most Outstanding Bloom In Show: 'Ruffian', Bill & Sally Hardwick

C. japonica: (In Open)

Large: 'Rena Swick Var.', Buford & Nita McRae
Medium: 'Betty's Beauty', C. M. & Lillian Gordy
Small: 'Pink Perfection', Bill & Sally Hardwick
Miniature: 'Man Size', James & June Keystone

C. japonica: (Protected)

Large: 'Edna Bass', G. Stuart Watson
Medium: 'Doris Ellis', Frank D. Jamison
Small: 'Kiku-Toji', Bob & Ann Gramling
Miniature: 'Fircone', Jim Pinkerton

C. reticulata:

In Open: 'Harold L. Paige', C. M. & Lillian Gordy
Protected: 'Frank Houser', Bill & Sally Hardwick
Runner-up: 'Dr. Clifford Parks', Frank Jamison

C. hybrid:

In Open: 'Julie', L. R. Smith
Protected: 'Mona Jury', Jim Pinkerton

Best White Bloom:

In open: 'Han-Ling Snow', C. M. & Lillian Gordy
Protected: 'Angel Kroman', Bill & Sally Hardwick

GOLD CERTIFICATES:

In open, won by: Parker Connor

SILVER CERTIFICATES:

In open, won by: C. M. & Lillian Gordy

NUMBER OF ACS MEMBERSHIPS SOLD: Two

WAYCROSS, Trust Company Bank of Southeast Georgia, November 17, 1993, 44th Annual Show

Sponsor: Federated Garden Clubs of Waycross

Number of Blooms Displayed: 430

Attendance: 350

C. japonica: (In Open)

Very Large: 'Nuccio's Pink Lace', T. L. & Carol Everett

C. japonica: (Protected)

Very Large: 'Moonlight Bay', Frank D. Jamison

C. reticulata:

In Open: 'Dr. Clifford Parks', Bill Patterson

C. hybrid:

In Open: 'Elsie Jury', Frank D. Jamison

C. sasanqua:

Best Bloom: 'Sparkling Burgundy', Mrs. L. A. Dillard

Best White Bloom:

'Nuccio's Gem', Frank D. Jamison

Best Bloom By Novice:

'Coral Pink Lotus', Laura J. Sweat

NUMBER OF ACS MEMBERSHIPS SOLD: One

LOUISIANA

JEFFERSON ISLAND, November 13, 1993

Sponsor: Texas Camellia Society

Number of Blooms Displayed: 224

Attendance: 200

Most Outstanding Bloom In Show: 'Julie', G. Rabalais

C. japonica: (In Open)

Very Large: 'Mathotiana', Bob McAdams
Runner-up: 'Carter's Sunburst Pink Var.', T. Weeks
Large: 'Swan Lake', H. Norsworthy
Runner-up: 'Mary Agnes Patin', R. Shaw
Medium to Large: 'Tom Knudsen', H. Norsworthy
Runner-up: 'Carol Humphrey Var.', T. Weeks
Medium: 'Campari Rose Var.', T. Weeks
Runner-up: 'Razen-Zome', G. Rabalais
Small: 'Little Babe Var.', T. Weeks
Runner-up: 'Ave Maria', T. Weeks
Miniature: 'Hopkins Pink', R. Shaw
Runner-up: 'Fircone', A. Johnson

C. reticulata:

In Open: 'Massee Lane Var.', H. Norsworthy
Runner-up: 'Betty Ridley', Bob McAdams

C. hybrid:

In Open: 'Julie', G. Rabalais
Runner-up: 'Mona Jury Var.', T. Weeks

GOLD CERTIFICATES:

In open, won by: H. Norsworthy

SILVER CERTIFICATES:

In open, won by: T. Weeks

NUMBER OF ACS MEMBERSHIPS SOLD: None

MISSISSIPPI

HOLIDAY INN EXPRESS, BILOXI, 42nd Annual

Sponsor: Mississippi Gulf Coast Camellia Society

Number of Blooms Displayed: 593

Attendance: 428

Most Outstanding Bloom In Show: 'Nuccio's Pink Lace', Jim Newell

C. japonica: (In Open)

Very Large: 'Mathotiana Var.', Don Thornhill
Runner-up: 'Mathotiana Variegated', Jim Newell
Medium: 'Betty Sheffield', John Rogers
Runner-up: 'Magic City', John Rogers
Small: 'Ave Maria', Elizabeth & Dave Scheibert
Runner-up: 'Little Babe Var.', Jim Newell

Miniature: 'Something Beautiful', Robert A. Stroud
Runner-up: 'Fircone Var.', John Rogers

C. reticulata:

Large/Very Large: 'Valentine Day', Walter M. Creighton
Runner-up: 'Dr. Clifford Parks.', Walter M. Creighton
Medium/Small: 'Black Lace', Walter M. Creighton

C. hybrid:

Large/Very Large: 'Mona Jury', Jim Newell
Medium/Small: 'Freedom Bell', Jim Newell
Runner-up: 'Debbie', Jim Newell

Best White Bloom:

'Lucy Stewart', Jim Newell

Best Bloom By Novice:

'Debutante', Sharon L. Myers

Tri-Color Certificate:

Won by: Marty DeBolt

Creativity Certificate:

Won by: Lucille Culbreath

NUMBER OF ACS MEMBERSHIPS SOLD: None

BROOKHAVEN, November 27, 1993, 31st Annual Show

Sponsor: Brookhaven Camellia Society

Number of Blooms Displayed: 391

Attendance: 310

C. japonica: (In Open)

Very Large: 'Veiled Beauty', Tom Perkins
Runner-up: 'Carter's Sunburst', James & Elaine Smelley
Large: 'Betty Sheffield Supreme', John Rogers
Medium: 'Sawada's Dream', John Rogers
Small: 'Tammia', W. L. Shappley
Miniature: 'Little Red Ridinghood', H. R. Norsworthy

C. japonica: (Protected)

Very Large: 'Show Time Var.', Jim Newell
Runner-up: 'Helen Bower', James & Elaine Smelley
Large: 'Betty Sheffield Supreme', John Rogers
Medium: 'Magic City', John Rogers
Small: 'Little Babe Var.', Jim Newell
Miniature: 'Fircone Var.', Jim Pinkerton

C. reticulata:

In Open: 'Hall's Pride Var.', Jim Pinkerton
Runner-up: 'John Hunt.', Jim Newell

C. hybrid:

In Open: 'Mona Jury', Jim Newell
Runner-up: 'Waltz Dream', John Rogers

Best White Bloom:

'Lucy Stewart', Liz Jeffares

Best Bloom By Novice:

'Mathotiana', Leonora Hunter
Runner-up: 'Pink Perfection', Gladys Stringer

Best Seedling Non-Reticulata Hybrid:

A. P. Landry

Best Mutant:

'Pirates Gold', John Rogers

Best Lincoln County Bloom:

'Alta Gavin', Tom Perkins

NUMBER OF ACS MEMBERSHIPS SOLD: None

SOUTH CAROLINA

COLUMBIA, SOUTH CAROLINA STATE FAIR, October 23, 1993

Sponsor: Mid-Carolina Camellia Society

Number of Blooms Displayed: 491

Attendance: Fair Attendance: 1,000

C. japonica: (In Open)

Very Large: 'Carter's Sunburst Var.', Lib Scott
Runner-up: 'Extravaganza', Elizabeth Brown
Medium: 'Dr. Burnside', Dr. Dan Nathan
Runner-up: 'Betty Sheffield Supreme', Dr. Herbert Racoff
Small: 'Kiku-Toji', Elizabeth Brown
Runner-up: 'Pink Pearl', Lib Scott
Miniature: 'Fircone Var.', Parker Connor

C. japonica: (Protected)

Very Large: 'Miss Charleston Var.', Dr. Dan Nathan
Runner-up: 'Tomorrow's Dawn', Oliver & Tyler Mizzell
Medium: 'Aspasia MacArthur', Bill Hardwick
Runner-up: 'Betty Sheffield Supreme', Dr. Dan Nathan
Small: 'Kiku-Toji Var.', Jim Pinkerton
Runner-up: 'Alison Leigh Woodroof', Dr. Dave Scheibert

C. reticulata:

In Open: 'Pearl Terry', Bill & Sally Hardwick
Runner-up: 'Harold L. Paige', Jim Pinkerton

C. hybrid:

In Open: 'Joe Nuccio', Bill & Sally Hardwick

C. sasanqua:

Best Bloom: 'Star Above Star', Elizabeth Brown

Best White Bloom:

'Campari White', Parker Connor, Jr.

Best White Protected:

'Silver Cloud', Oliver and Tyler Mizzell

Best Bloom By Novice:

'Daikagura', Helen Emerson

GOLD CERTIFICATES:

In open, won by: Parker Connor
Protected, won by: Jim Pinkerton

SILVER CERTIFICATES:

In open, won by: Elizabeth Brown
Protected, won by: Annabelle Fetterman

NUMBER OF ACS MEMBERSHIPS SOLD: None

HILTON HEAD, November 6-7, 1993, 3rd Annual Show

Sponsor: The Mall at Shelter Cove Merchants' Association

Number of Blooms Displayed: 593

Attendance: 2000

C. japonica: (In Open)

Large to Very Large: 'Tiffany', Mrs. Lib Scott
Runner-up: 'Helen Bower', Parker Connor
Small to Medium: 'Don-Mac', Mrs. Lib Scott
Runner-up: 'Campari', Mrs. Lib Scott
Miniature: 'Little Man', Parker Connor

C. japonica: (Protected)

Large to Very Large: 'Judge W. T. Ragland', Mr. & Mrs. Jack Teague
Runner-up: 'Carter's Sunburst', Mr. & Mrs. Jack Teague
Small to Medium: 'Woodville Red Blush', Mrs. Annabelle Fetterman
Runner-up: 'Wildfire', Mrs. Annabelle Fetterman
Miniature: 'Fircone', Elliott P. Brogden

C. reticulata:

In Open: 'Dr. Clifford Parks Var.', Clare & Lillian Gordy
Runner-up: 'Betty Ridley.', Clare & Lillian Gordy
Protected: 'Brian Gaeta', Mr. & Mrs. Jack Teague
Runner-up: 'Terrell Weaver', Dr. Dan Nathan

C. hybrid:

In Open: 'Julie Var.', Parker Connor
Runner-up: 'My Diane', Clare & Lillian Gordy
Protected: 'Rose Bouquet', Dr. Dan Nathan
Runner-up: 'Delores Edwards', Jim Pinkerton

C. sasanqua:

Best Bloom: 'Star Above Star', Clare & Lillian Gordy
Runner-up: 'Our Linda', Mrs. Annabelle Fetterman

Best White Bloom:

'Leucantha', Mrs. Lib Scott

Best White Bloom (Protected):

'Mary Alice Cox', Mr. & Mrs. Oliver Mizzell

Best Bloom By Novice:

'Mine-No-Yuki', R. W. Butler

GOLD CERTIFICATES:

In open, won by: Parker E. Connor
Protected, won by: Mrs. Annabelle Fetterman

SILVER CERTIFICATES:

In open, won by: Clare & Lillian Gordy
Protected, won by: Mr. & Mrs. Jack Teague

NUMBER OF ACS MEMBERSHIPS SOLD: None

TEXAS

HOUSTON, HERMAN PARK, GARDEN CENTER, December 4-5, 1993, 36th annual show

Sponsor: Houston Camellia Society

Number of Blooms Displayed: 463

Attendance: 309

C. japonica: (In Open)

Very Large: 'Leanne's Tomorrow Var.',
H. R. Norsworthy

Runner-up: 'Mary Agnes Patin',
Raymond Shaw

Medium: 'Campari', H. R. Norsworthy

Runner-up: 'Woody Estes', Raymond Shaw

Small: 'Kiku-Toji', Mr. & Mrs. Gregory Davis

Runner-up: 'Wilamina', Mr. & Mrs. Alfus
Johnson

Miniature: 'Grace Albritton', Dudley P.
Boudreaux

Runner-up: 'Ann Clayton', Gordon Rabalais

C. japonica: (Protected)

Very Large: 'Nuccio's Pink Lace',
Thomas M. Weeks

Runner-up: 'Snowman', Thomas M. Weeks

Medium: 'Betty Sheffield Supreme',
William O'Rourke

Runner-up: 'Magic City', Bob & Betty Henry

Runner-up: 'Little Babe Var.', Bob & Betty
Henry

Miniature: 'Man Size', Bob &
Betty Henry

C. reticulata:

In Open: 'Dr. Clifford Parks',
Raymond
Shaw

Runner-up: 'Al Gunn', H. R.

Norsworthy

Protected: 'Pink Bouquet',
Thomas M.

Weeks

Runner-up: 'Julie Var.', H. R.
Norsworthy

C. hybrid:

In Open: 'Julie', Raymond
Shaw

Runner-up: 'Julia', H. R.

Norsworthy

Protected: 'George Firth Var.',
Thomas M.
Weeks

Runner-up: 'Dr. Clifford Parks',
Var.', H. R.
Norsworthy

Best Red Bloom:

'Dr. Clifford Parks', Mr. & Mrs.
Gregory
Davis

Best Bloom By Novice:

'Cheerful', William Gamble

GOLD CERTIFICATES:

In open, won by: H. R. Norsworthy

Protected, won by: Thomas M. Weeks

SILVER CERTIFICATES:

In open, won by: Mr. & Mrs. Gregory E.
Davis

Protected, won by: H. R. Norsworthy

NUMBER OF ACS MEMBERSHIPS SOLD: One

NUMBER OF LOCAL MEMBERSHIPS SOLD:
Two

VIRGINIA

NORFOLK, March 27-28, 1993, 46th Show

Sponsor: Virginia Camellia Society

Number of Blooms Displayed: 733

Attendance: 450

C. japonica: (In Open)

Large: 'Elegans Supreme', William G.
Redwood

Runner-up: 'Kramer's Supreme',
Douglas M. Simon

Medium: 'Gov. Mouton', William G.
Redwood

Runner-up: 'Betty Sheffield Supreme',
Dr. Preston Wilds

Small: 'Tom Thumb', Mr. & Mrs.
Ira E. Hefner

Runner-up: 'Les Marbury', Dr. J. M. Habel

Miniature: 'Thirty Drops', Mr. & Mrs. M. C.
Stallings

Runner-up: 'Man Size', Aldon Turner

C. japonica: (Protected)

Large: 'Arlene Marshall', Dr. & Mrs. J. M.
Habel

Medium: 'Jacks', Mr. & Mrs. R. L. Waltz

Small: 'Black Tie', Mr. & Mrs. R. L. Waltz

C. reticulata:

Protected: 'Margaret Hilford', Mr. & Mrs. Ira
E. Hefner

Runner-up: 'S. P. Dunn', Mr. & Mrs. Ira E.
Hefner

C. hybrid:

Protected: 'Pink Dahlia', Mr. & Mrs. Ira E.
Hefner

Runner-up: 'Honey Moon', Mr. & Mrs. Ira E.
Hefner

Best White Bloom:

'Nuccio's Gem', Ann Schwarz-Miller

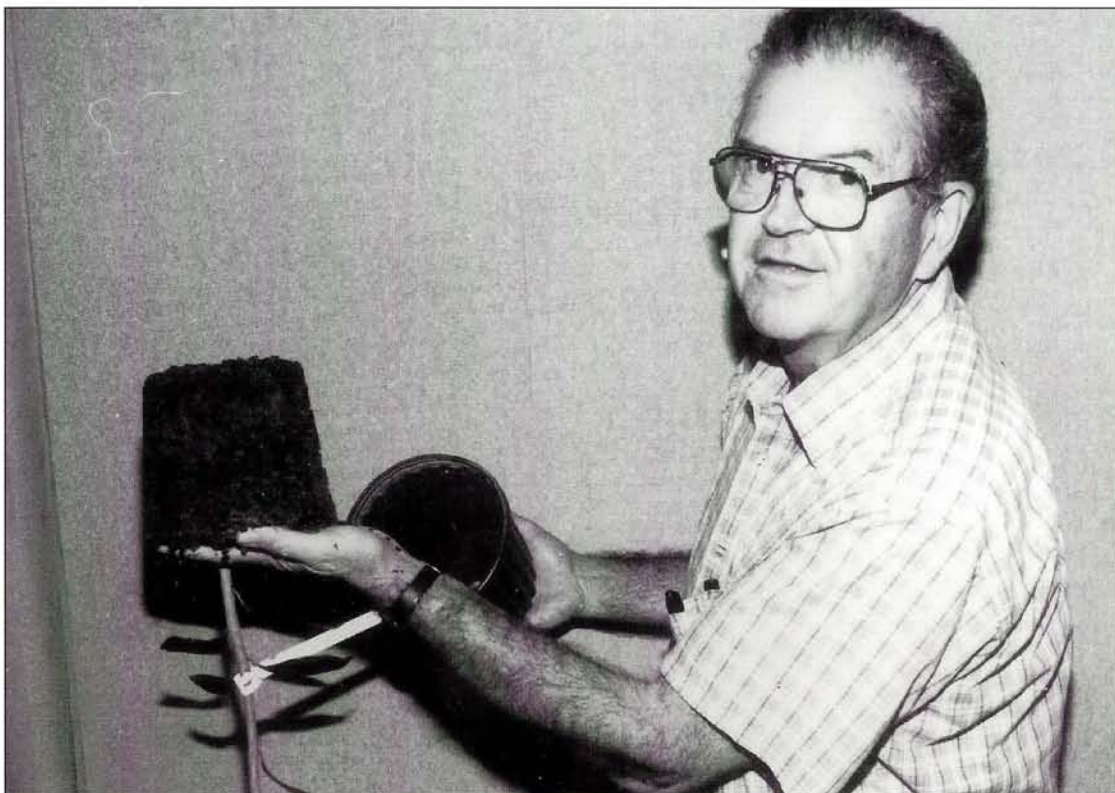
Runner-up: 'Emmett Barnes', Dr. & Mrs.
J. M. Habel

Protected: 'Shiro-Botan', Dr. & Mrs. J. M.
Habel

Provisional Commended Seedling Certificate

C. japonica certificate won by Dr. & Mrs. J. M.
Habel for No. 900, originated by Dr. J. M.
Habel

NUMBER OF ACS MEMBERSHIPS SOLD: One



Hulyn Smith demonstrates one of his many points during his outstanding lecture in Mobile.
(Photo by Greg Davis).

Election of Directors and Directors-At-Large for the Gulf Coast

Fall 1994 is the time to elect or reelect State Directors and Directors-at-Large for the Gulf Coast Territory. In accordance with the Bylaws of the American Camellia Society, the Gulf Coast Vice President, Art Landry, serves as chairman of the Nominating Committee. It is important for you to know that as an ACS member, you have the opportunity to make nominations for your State Director and the two Directors-at-Large. *You must have the permission of the nominee, in writing, before forwarding the name and a brief biographic sketch of the nominee's activities in local, regional, national and international camellia societies.*

The names of the nominees should be sent to any member of your State Nominating Committee on or before May 1. The Regional Vice President will forward to the Editor of the Camellia Journal by June 1, the nominees accompanied by a biographical sketch for printing in the August Journal. Ballots will be mailed to all Gulf Coast members on September 1. Ballots must be received at Headquarters on or before Friday, October 7. If you need further information, you can contact Chairman Arthur Landry, 10522 Ferncliff Avenue, Baton Rouge, LA 70815 or telephone (504) 275-2119.

The current Directors and Directors-at-Large of the Gulf Coast are listed below with a brief statement as to whether that person is eligible for reelection.

STATE DIRECTORS

AR/LA - Bob Stroud is completing the unexpired term of Art Landry. He is **ELIGIBLE** for reelection.

ALABAMA - Jim Oates has served two terms and is **NOT ELIGIBLE** for reelection.

FLORIDA - Pearl Terry has served two terms and is **NOT ELIGIBLE** for reelection.

MISSISSIPPI - Harry Stone has served two terms and is **NOT ELIGIBLE** for reelection.

TENNESSEE - Jane Griffin has served one term and is **ELIGIBLE** for reelection.

TEXAS - Hyman Norsworthy has served one term and is **ELIGIBLE** for reelection.

DIRECTORS-AT-LARGE

Marian Dils has served two terms and is **NOT ELIGIBLE** for reelection.

Pat Ryan has served two terms and is **NOT ELIGIBLE** for reelection.

Gulf Coast Vice President, Art Landry has announced the following members of the State Nominating Committees.

ALABAMA - Jim Oates
Ken Youngchild

ARKANSAS/LOUISIANA -
Nick Kooney
Vi Stone

FLORIDA - Kay Berridge
Ed Atkins

MISSISSIPPI - Liz Jeffares
Elaine Smelley

TENNESSEE - George Griffin
Lillian Harris

TEXAS - Greg Davis
Alfus Johnson

ADDITIONAL JUDGES APPOINTED and RECERTIFIED JUDGES

Terms of Judges and Novice Judges listed herein expire December 31, 1998.

FLORIDA

Destin:

Betty B. Allison

GEORGIA

Marshallville:

Grady Stokes, Jr.

MISSISSIPPI

Biloxi:

Kenneth Bounds (Novice)
Helen Bounds (Novice)

Brookhaven:

George Hallas (Novice)

NORTH CAROLINA

Four Oaks:

John A. Penny

SUSTAINING/JOINT SUSTAINING

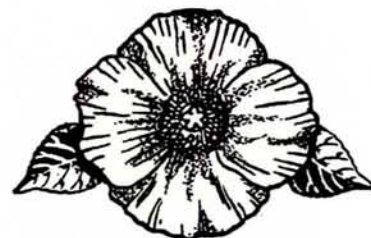
(Since November 1993 Journal)

Mr. and Mrs. John C. Alden, Fort Valley, GA
 Mr. and Mrs. Bobby Allen, Marshallville, GA
 Mr. & Mrs. Allen L. Arnold, Valdosta, GA
 Mr. & Mrs. George M. Bacon, Jr., Norfolk, VA
 Baton Rouge Camellia Society, Baton Rouge, LA
 Mr. F. F. Becker, II, Brookhaven, MS
 Dr. James Bonner, Pasadena, CA
 Mr. and Mrs. D. P. Boudreaux, Port Neches, TX
 Mr. and Mrs. Kenneth Bounds, Biloxi, MS
 Mr. and Mrs. Norm Cantrell, Fort Valley, GA
 Capital Nursery Company, Sacramento, CA
 Mr. and Mrs. Thomas G. Casey, Sr., Kingland, GA
 Mrs. Jean Comber, Pensacola, FL
 Mr. and Mrs. W. R. Coons, Jr., Port Neches, TX
 Mrs. C. X. Copeland, Jackson, MS
 County Line Nursery, Byron, GA
 Deans' Nursery, Inc., Lucedale, MS
 Mr. & Mrs. Rupert E. Drews, Charleston, SC
 Ms. Tamara Drury, Brunswick, GA
 Mr. Ike Flatau, Macon, GA
 Mr. and Mrs. Michael J. Flynn, Palo Alto, CA
 Mr. and Mrs. William A. Gardner, Ninety Six, SC
 Miss Sarah E. Gillespie, Hattiesburg, MS
 R. B. and Anne Gramling, Tallahassee, FL
 Mr. and Mrs. George N. Griffin, Nashville, TN
 Jacqueline G. Herterich, Fernandina Beach, FL
 Mr. and Mrs. Peter Keller, Arcadia, CA
 Kinney Nursery, Semmes, AL
 Pamela Evans Kolb, Seattle, WA
 Mr. and Mrs. Arthur P. Landry, Baton Rouge, LA
 Library Agriculture Canada, CANADA
 Mr. D. F. Mayfield, Baton Rouge, LA
 Mr. and Mrs. James E. McCormack, Alexandria, VA
 Mrs. Ivan J. Mitchell, Melrose, FL
 Ozone Camellia Club, Slidell, LA
 Mr. George Patton, Jr., Barrington, IL
 Mr. and Mrs. Jim Pinkerton, Lugoff, SC
 Mr. and Mrs. Ric Powers, Perry, GA
 Mr. and Mrs. T. E. Powers, Wilmington, NC
 Dr. and Mrs. Herbert Racoff, Colombia, SC
 Robert & Jennifer Ray, Fort Valley, GA
 Mr. and Mrs. John L. Rogers, Laurel, MS
 Mr. and Mrs. G. C. Rowland, Atlanta, GA
 Mr. and Mrs. Milton L. Schmidt, Arcadia, CA
 Dr. and Mrs. Dan Scholz, Baton Rouge, LA
 Mrs. Delbert C. Smith, Fairmont, WV
 Mr. and Mrs. J. Kyle Spencer, Columbus, GA
 Mr. Charles F. Stanford, Jr., Gulfport, MS
 Mr. and Mrs. Alban Stewart, Tallahassee, FL
 Mr. R. Edwin Streit, Fresno, CA
 Tidewater Camellia Club, Wilmington, NC
 Mr. and Mrs. W. B. Todd, Jr., Fort Worth, TX
 Tom Dodd Nurseries, Semmes, AL
 Universitats-Bibliothek, GERMANY
 Mrs. Spencer C. Walden, Jr., Albany, GA
 Mr. and Mrs. Jacob H. Wamsley, II, Tucker, GA

PATRONS

*(Since November 1993
Journal)*

Mrs. G. F. Abendroth,
 Shreveport, LA
 Mr. and Mrs. Carl M. Allen, Jr.,
 Wilmington, NC
 Ann Blair Brown,
 Fort Valley, GA
 Citizens Bank,
 Fort Valley, GA
 Mr. and Mrs. Louis R. Daudt,
 Seaford, DE
 Mr. William W. Donnan,
 Fullerton, CA
 Mr. and Mrs. J. Edward Flournoy,
 Manassas, VA
 Dr. and Mrs. Vernon J. Grantham
 Mr. and Mrs. Jack Greenberg,
 Dallas, TX
 Mrs. Douglas D. Hall,
 Chevy Chase, MD
 Mr. Frank Hubert,
 Bryan, TX
 Dr. Fred Lee,
 Minden, LA
 Mrs. George Luce,
 Fort Valley, GA
 Middle Georgia Bank,
 Byron, GA
 Nationsbank,
 Macon, GA
 Mr. and Mrs. L. B. Schrage,
 Gainesville, FL
 Mrs. Carroll B. Terry,
 Orlando, FL
 Mrs. C. E. Turner, Jr.,
 Columbus, GA
 Mr. and Mrs. G. Stuart Watson,
 Albany, GA



CAMELLIAS REGISTERED WITH THE ACS SINCE THE AUGUST 1993 JOURNAL

<u>Name and Description</u>	<u>Registry Number</u>	<u>Originator</u>
'George Gerbing', very large, pink, semidouble, <i>C. reticulata</i> (<i>C. reticulata</i> 'Patricia Coull' x <i>C. japonica</i> 'Ville de Nantes'), mid-season to late	2281	Marvin Jernigan
'Little Hooper', small, white, anemone form, <i>C.</i> <i>japonica</i> seedling of 'Mrs. Hooper Connell', early	2282	Ivan J. Mitchell
'Lisa Beasley', miniature, pink, rose form double <i>C. hybrid</i> (<i>C. fraterna</i> x <i>C. japonica</i>), late	2283	Marvin Jernigan
'Sherry Lynn', medium, blush pink, formal double, <i>C. japonica</i> seedling of 'Nina Avery, early to late	2284	Marvin Jernigan
'Brenda Lee Willbern', large, white with narrow rose red stripes, peony form, <i>C. japonica</i> chance seedling, early to late	2285	Dr. O. V. Lewis

Special Gifts

Mrs. Richard W. Freeman

Operating Fund

Nell and Stuart Watson

Mr. Harold Green

Mildred and Frank Cross

Colonel and Mrs. Hillary

Perdue

Get Well Dr. Dan Nathan

Mrs. Ann Blair Brown

For The Camellia Festival

Dr. and Mrs. Daniel E. Nathan

Happy Birthday Ed Mathews

Dr. Earl Beatty, Jr.

Appraisal Fee

Atlantic Coast Camellia Society

In honor of Donna and Bill

Shepherd's Work With The
History of The Atlantic Coast
Camellia Society.

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Mrs. Louise Priester

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garden.

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Camellia plants for greenhouse

Dr. Walter Homeyer, Jr.

Camellia plants for greenhouse

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(As of December 31)

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Mrs. Julia A. Bissell

Reticulata

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Donna and Bill Shepherd

Japonica

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Mr. and Mrs. Roy H. Homans
Mr. and Mrs. Don D. Kinnett
Mr. Douglas Mayfield



Gay McCoy poses with mom and dad, Lorena and Boyd McRee at the Gulf Coast Meeting (Photo by Greg Davis).

Friends of Camellias

Continued

(As of December 31)

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Mr. and Mrs. Walter M.
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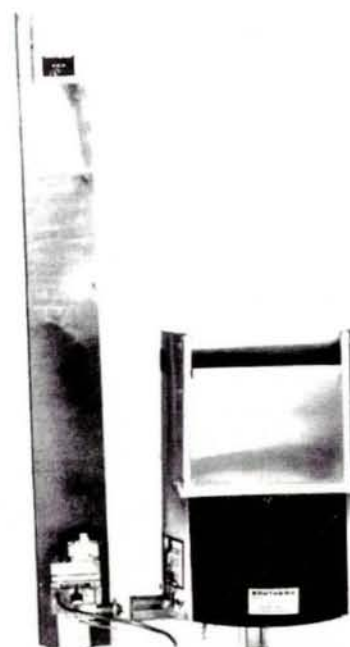
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(ACS Cooperative Shows)

PLACE, LOCATION, SPONSOR

DATE

Oakville, CA; Robert Mondavi Winery; Napa Valley Camellia Society	February 5, 1994
Jackson, MS; Deposit Guaranty National Bank Plaza; Jackson Camellia Society	February 5-6, 1994
Pineville, NC; Carolina Place Mall; Charlotte Camellia Society	February 5-6, 1994
Thomasville, GA; Garden Center; Thomasville Garden Club	February 12, 1994
Birmingham, AL; Birmingham Botanical Gardens; Birmingham Camellia Society	February 12-13, 1994
Columbia, SC; Columbia Mall; Mid-Carolina Camellia Society	February 12-13, 1994
Atlanta, GA; Atlanta Botanical Garden; North Georgia Camellia Society	February 19-20, 1994
Fayetteville, NC; Cross Creek Mall; Fayetteville Camellia Club	February 19-20, 1993
Fort Worth, TX; Fort Worth Garden Center; Fort Worth Camellia Society	February 19, 1994
Wilmington, NC; Tidewater Camellia Club	February 26-27, 1994
Nashville, TN; Botanic Hall - Cheekwood; Middle Tennessee Camellia Society	February 26-27, 1994
Warner Robins, GA; Houston Mall; Middle Georgia Camellia Society	March 5, 1994
Fresno, CA; Fashion Fair Mall; Central California Camellia Society	March 12-13, 1994
Greensboro, NC; Holly Hill Mall; Piedmont Camellia Club	March 12-13, 1994
Portland, OR; Mall 205; Oregon Camellia Society	March 26-27, 1994
Norfolk, VA; Norfolk Botanical Garden; Virginia Camellia Society	March 26-27, 1994
Waycross, GA; Trust Co. Bank of SE Georgia; Federated Garden Club of Waycross & Trust Co. Bank	November 16-17, 1994
Valdosta, GA; Valdosta Garden Center; Valdosta Camellia Society and First State Bank & Trust Co.	November 19-20, 1994
Brookhaven, MS; State Bank & Trust Co.; Brookhaven Camellia Society	November 26, 1994
Lafayette, LA; University of Southwestern LA Campus; South Louisiana Camellia Society	December 10-11, 1994

Memorial Gifts

(The name in boldface type indicates the person in whose memory the donation has been made as of December 31, 1993)

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A happy threesome - Erin Stroud, Nick Kooney and Liz Jeffares pause during the Hospitality Hour at Mobile. (Photo by Greg Davis)



Ann Blair Brown

We are about midway in the show season and I hope that you are actively participating in the shows. Some of the earlier shows had fewer blooms than in previous years but those on the showtables were fine quality blooms. Many have telephoned headquarters and were reassured that blooms were slow in opening in many areas. Now those reluctant buds are in full bloom and what a welcome sight they are. It is a treat for us to share these spectacular blooms with many of our northern visitors that have never seen such blossoms in winter.

By the time you receive this Journal, the Camellia Festival will be in full swing. From all indications, our fourth festival will be a great success. Our staff and volunteers have done an outstanding job in planning the many events.

Speaking of volunteers, they decorated the buildings in holiday finery for the Christmas season. The Open House and Festival of trees began on Sunday, December 5th. Fresh greens, fruit and lovely velvet ribbons decorated the outside of the

buildings. Inside the large, theme decorated Frazer Fir trees were placed in front of the windows in the Fetterman Building Gallery. During the Open House, our hundreds of visitors were entertained by the MiesterSingers from Atlanta, under the direction of Kathy Teeter, the daughter-in-law of retired employee, Helen Teeter. The group, attired in old English costumes, enchanted our guests. Their beautifully blended voices ushered in the Christmas season. Many of our guests lingered, enjoying the beauty of the music, the tree and the delicious refreshments.

It is with regret that I inform you of the death of former gardener, Eif Girdner on December 28. He was 91 years old and spent his entire working years at the Massee Lane property. He was retired June 1993. He suffered a fall just prior to Christmas and did not recover. He was dedicated to Massee Lane and probably knew more about our property than anyone. He was in charge of planting the pecan trees in 1932. He is missed by the staff at the Headquarters.

Congratulations to Viola Cochran of the Ozone Camellia Society. She was ACS membership chairman for the recent show. She secured 15 new members at this one day show. We appreciate her devotion in securing new members. She and Martha Dewell of Fayetteville Camellia Club are true promoters. Is it hard to get new members? Just ask Viola or Martha. Each will reply, "I just ask". I

FROM THE DESK OF THE EXECUTIVE DIRECTOR

challenge YOU to use their technique.

I hope that you have made your plans to attend the annual meeting in Slidell Feb. 23-27. There is a schedule elsewhere in this Journal. For more information, see pages 3-5 in the November Journal. The committee has planned many interesting activities for the participants.

When Spring arrives, Massee Lane Gardens will be enhanced by a sea of daffodils. Thanks to the efforts of Kitty and Dick Frank of Nashville, TN, approximately 180 varieties of very choice daffodils were planted at Massee Lane in mid November. These several hundred bulbs should make the area a fairyland. Kitty is the talented Editor of the national Daffodil Journal and both she and Dick are accredited Daffodil and Camellia Judges. Through their contacts, bulbs were secured from growers in Ireland and the United States. Dr. Susan Raybourne, Regional Vice President, assisted in the all day planting as did the Massee Lane gardeners and our horticulturist.

The family of the late Martha Rackley Beatty presented ACS with eleven pieces of antique furniture, dating from 1795 to 1850. They have been placed in the Fetterman Building as a memorial to her and her aunt, Lessie Rackley Hardin. More information concerning this handsome gift will be in the may Journal. We are grateful to husband, Dr. Earl Beatty, Jr. daughter, Jean Sutton and son, Commander Earl Beatty, III.

See you in Slidell.

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