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Camellia

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Paul J. Howard's photo

PINK STAR

TWO OLD MONARCHS OF THE ORIGINAL LANDSCAPE PLANTED ABOUT 1870. CLARKE'S RUD ON THE LEFT, ALBA PLENA IN FULL SUN ON THE RIGHT.

CAMELLIA RAMBLINGS FROM SACRAMENTO

By Jerry Olrich

So much has been written about California's Capitol and its beautiful grounds that sometimes one wonders if there is any more left to write. I have written about the grounds so often that at times I find myself repeating some of the same things. But when something is beautiful one cannot help describing its beauties over and over again. The Capitol Grounds are second to none, and we in California can be very proud of them and thankful to those pioneers who laid them out and made the first plantings.

The original grounds around the Capitol, landscaped in 1869, comprised four blocks. Later six more blocks were added, making a park of 33.5 acres exclusive of buildings and drives. About twenty-four camellias were planted in the original four blocks. A Christmas Red and a Pink Perfection were placed at the northwest corner of the Capitol Building. The Christmas Red is still there, but the Pink Perfection fell by the wayside because of a strong draft around the building.

At the southwest corner an Alba Plena and Belgian Red were planted, and these two trees still stand there. The Alba Plena takes a terrific beating from the public as it is close to the walk and people break many branches in stealing the flowers. This particular plant is growing in full sun which proves that, once established, a camellia will take a lot of punishment not only from nature, but also the public.

Directly on the west side of the building, where it gets the hottest sun for about six hours in the afternoon, is a specimen Contessa Lavinia Maggi, which is in excellent shape. Although this plant gets some sunburn it is not enough to hurt it.

On the east side of the building there used to be ten camellias growing in a row. Normally one would say that this would be an ideal spot for them, but due to the fact that the prevailing winds are from the southwest, these trees were slowly dying because of the draft. After about half of them had died, we decided to try and save the others. We were fortunate in saving three out of five. Two were Alba Plenas and the other one a Reine des Fleures. These three are now doing exceptionally well.

In the borders around the original four blocks of the Capitol Grounds are some very fine specimens of Peoniflora. One of the trees is quite old and we have been told by various camellia collectors and growers that this particular plant is undoubtedly the parent of all Peonifloras. I have seen some very interesting sports on this particular tree all at one time—such as Pink Lady, Strawberry Blonde, and the pure red Peoniflora which no one has yet named. One year, whether it was the fertilizer or weather conditions, all the blossoms were on the pinkish side and it looked like a tree full of Pink Lady blooms. Thousands of cuttings have been taken from this tree and sometimes I wonder how it keeps on living.

In this border there are also several Christmas Red plants which are very showy because of their rich green foliage and profusion of bloom. This particular variety is not a collector's item, but it makes a wonderful plant for parks and large estates. I do believe that this camellia makes the best understock for grafting. We have experimented with Christmas Red and find that its cuttings will grow much faster and make a better root system in a much shorter time than other varieties. I guess this can be simply attributed to the fact that it is a seedling.

About a hundred and fifty yards on the east side of the building, planted on what we call the Twelfth Street Walk, are some fairly large specimens such as Pink Perfection, Mrs. John Laing, Elizabeth Arden, Purity, Dante, Alba Plena, Belgian Red, and a couple of others that are unnamed and in my opinion should remain so.

Almost all of these were planted before 1900, but no one knows exactly when as each time a new State Gardener was appointed all previous records were destroyed. However, I do believe that some of these trees are nearly a hundred years old.

There are also quite a number of old camellias that have been moved into the grounds in the past few years from private homes, and one was moved from a local cemetery. In 1940 we were given a few old timers that were about to be destroyed. Can you imagine one of them being the parent plant of all Uncle Sams? This tree is now about eighty years old, but it had seen quite a bit of abuse and neglect at the hands of tenants of the house from which it was moved. Now it is growing and doing wonderfully well.

The other tree, much to my surprise after seeing it bloom, was a Princess Bachinachi. We didn't expect it to live, but we decided to move it anyway. Can you imagine a tree living with a leaky gas line directly underneath it? It was unbelievable but true. Who says camellias are not hardy? Sometimes I wonder how much abuse they *can* stand.

Another interesting tree is an Alba Fimbriata that was originally growing in a cemetery, and I doubt if it received much water during the summer. Local camellia growers kept this particular plant pretty well skinned for cuttings and scion wood and when I first saw this tree all it had was three forked branches and not much green growth. The lady who owned the plot where the tree was planted asked if I would move it into the park and try to save it. At first I was a little reluctant about doing this, but as there wasn't any Alba Fimbriata in the grounds we decided to chance moving it. To see the tree now makes it hard for anyone to believe this story, for it is a beautiful specimen about eighty years old.

Another patriarch is a Colonel Firey that used to be in a section of the park where it didn't have much protection from vandals. This tree is approximately seventy years old and although not a big plant it has lovely large flowers. How many cuttings have been taken from it no one knows, but I'll bet they would run into thousands.

There are about sixty real old-timers growing throughout the grounds. Of these, half were moved into the grounds in the past ten years and each moving is a story in itself.

One of our most interesting operations was moving a large Purity from across town. Four men boxed this plant one day and loaded it on a small dolly which could be towed behind a truck. Everything went along nicely until the crew reached the intersection of Tenth and Jay Streets, which is one of the busy corners in town. When the light turned green they decided to cross, but just as they got into the center of the intersection a gust of wind hit the tree and blew it over. Of course, traffic was tied up immediately. It seems that a dozen policemen appeared out of nowhere and insisted that something be done about clearing the street. In about an hour the tree was loaded back on the dolly and the procession moved on to the grounds where the tree was planted without any ill effects. This is one time that a camellia really stopped the traffic.

(Continued on page 17)

A SYMPOSIUM ON GRAFTING[1]

By O. E. Hopfer

Assisted by a Panel of Experts

I would like to make a few observations on the *what, when, where* and *why* of grafting, just to lay a little groundwork for the techniques which will be explained later.

UNDERSTOCK. First, what kind of camellias do we usually use as understock for grafting? The answer is that we normally try to take advantage of the root system of an established plant which may have attained considerable size, but whose blooms are not of the quality which we consider fine today. Sometimes we get discouraged with the performance of a certain pink variety which consistently drops its buds, and finally we decide to cut its head off and graft a first-class scion onto the established root stock. There is no need to dig up and destroy an entire plant just because we do not like the quality of its flowers. It is much easier to cut it off within a couple of inches of the surface and insert several high-grade scions. If the plant is a large one, with a trunk say of 1½ to four inches in diameter, we often use the triangular notch graft which Dr. Allington will discuss later.

Sometimes we have a lot of seedlings which we have grown to flowering size, only to find the blooms are inferior and not worth giving the plant garden space. Since we do not want to be horticultural wasters, we utilize the root stock by grafting onto it a choice variety.

SCIONS. Camellias which are very scarce are often used to supply scions for grafting; first, because of the paucity of new growth from which to make cuttings; secondly, because two or three scions can be made from the same amount of wood that is used for a cutting; and thirdly, because the single or two-eyed scion grafted onto a well-developed root system will grow much faster than a cutting on its own roots. This rapidity of growth, however, continues only until nature strikes a balance between the amount of roots and foliage. Thereafter a grafted plant will grow no faster than one on its own roots.

GRAFTED PLANTS. Sometimes we go to a nursery and a salesman shows us a small camellia, emphasizing that "This is a *grafted* plant." In the past few years we have seen a great many two-year grafts from 4-inch pots, transferred to gallon cans and sold at fantastic prices. In such plants there is hardly enough difference between the root system of the understock and the roots of a cutting-grown camellia to warrant buying such small grafted plants. I can see why a nurseryman would graft some of the very rare varieties; but when he tries to impress me by showing me a good common variety like Chandleri Elegans and chimes in, "This is a grafted plant," he is only kidding himself. In short, a camellia is not necessarily better because it is grafted. On the other hand, if you do not know varieties and you are buying camellias blindly, you might do better to purchase grafted plants, assuming that the nursery would not go to the trouble of grafting the more common varieties of which lots of cutting wood is available.

COMBINATION GRAFTS. At my home we have grafted all kinds and sizes of camellias, from 4-inch pots up to trees 18 feet tall. Right near our front entrance, for instance, I had planted Jennie Lind which developed into a fine looking tree, but every year the flowers were miserable. Camellia fans would

[1]This symposium was held at the January 5, 1948, meeting of the Northern California Camellia Society. It is reprinted here from the N.C.C.S. *Bulletin,* 1:1-8, January 1948.

visit my home with high expectations, feeling that here they would surely see some fine foreign importations and the best in camellias—then, mounting my front steps, they would be greeted by Jennie Lind. Well, we watched Jennie grow from 4 feet to 18, and it was such a nicely formed tree and looked so green and glossy we hated to cut it down and start all over. It was not good enough to keep, yet it was too good—just as a green tree—to throw away. So, one Wednesday morning I called Dr. Allington and suggested that if he felt like doing a little surgery on his afternoon off, I would leave my office at noon and meet him at my home and we would cut down Jennie Lind and work her over. Doc is a whizzer with a scalpel and before we got through we had put in triangular notch grafts of Adolphe Audusson, Gigantea, and English Donckelari. Next year, when visitors come to our home during camellia season, they will see three of the choicest varieties as soon as they set foot on the property.

Another tree that I worked over was a large La Peppermint. I tired of the habit of this variety producing blooms which I could not pick. Every time I tried to twist off a bloom, all I got was a handful of petals. The blooms always shattered. One afternoon I cut it down and grafted eight choice varieties onto it.

Cutting off one of my large seedlings I grafted 14 choice white varieties, which some day may bloom into a regular symphony in white.

In grafting combinations of varieties onto understock, it is possible to conjure up many interesting combinations, all of which can be grown on one bush; but if you want to maintain a beautiful garden instead of developing a horticultural curiosity shop, you will need to use good taste and judgment in grafting. I have used the art of grafting primarily to do something useful with worthless seedlings and to correct some of my earlier mistakes in judgment when I was an avid camellia collector.

WHIP GRAFT. While, like the nurseryman, I probably make more cleft grafts than any other type, I want to demonstrate to you my favorite method of grafting—the WHIP GRAFT. I like the whip graft particularly because, when well done, it is impossible to detect the graft union without minute examination. I use the whip graft whenever I find that I have a scion and an understock of the same diameter. I cut off the understock with a slanting, diagonal cut of perhaps 1½ to 2 inches in length. Then I lay the scion alongside the slanted understock and measure on the scion the exact length of the slanting cut I made on the understock. The length of the slanting cut on the scion must be exactly the same length as the slanting cut on the understock. After making the slanting cut at the base of the scion, I cut a tongue into the slanting cut on both the scion and the understock. When these two tongues are neatly fitted and the scion carefully wrapped, there are six junctures where the cambium layers are matched up—three on one side and three on the opposite side. Thus, if you are wearing bi-focals and some of your matching up is done by feel rather than by sight, you have six chances of matching with a whip graft as compared to two chances with a cleft or wedge graft. I believe that the whip graft is neater, stronger, and avoids all of the humps and bumps and other disfiguring evidence of grafting so characteristic of other more commonly used methods. But, as stated at the beginning, you must use an understock and a scion of exactly the same diameter.

PANEL OF EXPERTS. We have a panel of expert grafters, each with his own particular techniques and aptitudes, and I am going to ask Dr. Herman Allington to tell you how to make a triangular notch graft which is partic-

(Continued on page 25)

NEWS NOTES

PRIDE COMES BEFORE A FALL. Many of you have wondered what happened to pages 23 and 24 of the January issue. While we loudly proclaimed the Bulletin "America's Finest Camellia Magazine" on page 22, our printer, obviously in high spirits (He probably keeps them in the chandelier), failed to correct any of the typographical errors on page 23 and better still decided to leave page 24 blank. Our apologies to Paul J. Howard's California Flowerland and Home Gardening Magazine whose ads were so neatly deleted, and to all our readers who tried to decipher "Camellia Oddities." The only suggestion we can make at this late date is to clip out the leaf and frame it as a fine example of what happens to people who walk with proud feet.

THE SECOND ANNUAL CAMELLIA SHOW of the San Diego Camellia Society will be held at Balboa Park in the Floral Association Building on February 19 and 20. Many unusual designs and displays will be featured in the motif "Jewels of the Garden." Exhibits will be open from 1 P.M. to 9 P.M. on the 19th, and 10 A.M. to 6 P.M. on the 20th.

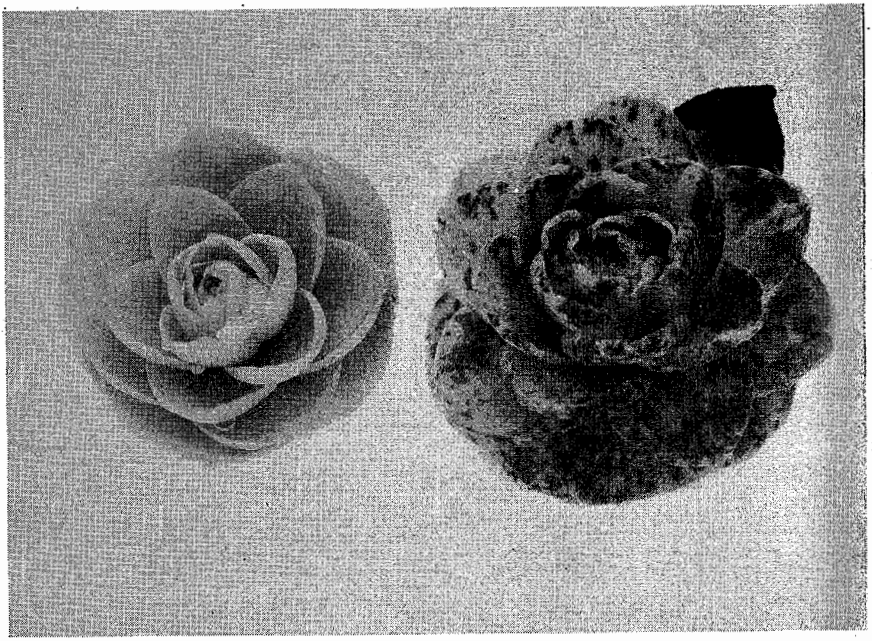
GLENDALE'S PACIFIC CAMELLIA SOCIETY will stage its camellia show February 26 and 27 in the Glendale Civic Auditorium, 1401 N. Verdugo Road, Glendale. Exhibits will be open from 12 NOON to 10 P.M. on the 26th and 10 A.M. to 9 P.M. on the 27th.

BACK COPIES OF THE BULLETIN are needed to make up complete files to be placed in the Los Angeles Public Library, Pasadena Public Library, and the libraries at U.S.C. and U.C.L.A. Members having copies of the following are requested to send them to our Secretary as soon as possible: 1945—January, February, November, December; 1946—February, September; 1947—January, April, August, November, December; 1948—February, November.

HAVE YOU PAID YOUR 1949 DUES? Members are requested to attend to this at their earliest convenience if they wish to continue receiving the Bulletin and other benefits of the Society. Dues for all classes of membership is now $4.00 per year. Either send your check or money order to Col. C.M. Gale, 40 N. San Rafael Ave., Pasadena 2, or see him no later than our special February meeting on the 25th.

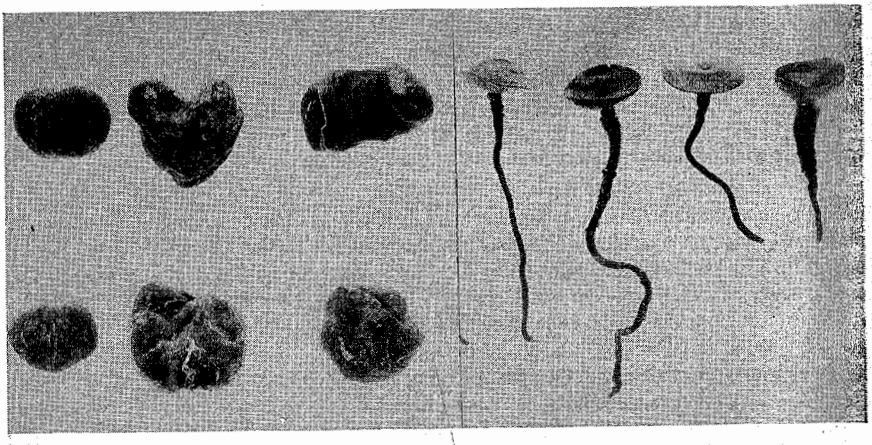
OUR CORRESPONDENT IN SAN DIEGO, Harvey Short, writes: "The wintry blasts of 1949 have left our plants stunned but undaunted. Alba Plena, Marchioness of Exeter, and the Daikaguras have weathered the storm without freezing their flowers. Fifteen-mile night breezes holding the temperatures at 27 degrees kept the frost from biting either the camellias or citrus deeply. But four inches of wet snow at one time was too much for heavy laden trees and we had considerable breakage. Some lath houses caved in from the extra weight, causing much confusion but little damage. Blooming has been slowed down at least two weeks over last year, but the buds are in excellent condition promising a fine season after all."

THE ENGLISH TRANSLATION OF TIROCCO'S LA CAMELIA will begin its serial appearance in the Bulletin as soon as copyright arrangements are completed. Don't let your subscription expire.



Courtesy H. N. Hansen

AT LEFT IS AN UNINFECTED BLOOM. AT RIGHT EARLY STAGE OF SPOTTING TWENTY-FOUR HOURS AFTER SPRAYING WITH SPORES.



AT LEFT SCLEROTIA WHICH FORM IN THE BASES OF INFECTED FLOWERS. AT RIGHT ARE THE APOTHECIAL CUPS WITH STIPES WHICH ARISE FROM THE BURIED SCLEROTIA. REDUCED ABOUT ONE HALF.

CAMELLIA FLOWER BLIGHT CONTROL[1]

By D. G. Milbrath

The method of control recommended herein is a logical procedure for disrupting the course of development of the causal fungus. It is a direct attack on the fungus and not a protective measure of the flower.

The disease is caused by the fungus known as *Sclerotinia camelliae.* The petals of the flowers are the only parts of the whole camellia plant which are attacked and affected by the fungus.

The attack commences through the falling of a spore of the fungus on the surface of a petal. There the spore germinates; the created mycelium invades the tissues of the petal; it causes those tissues to turn brown and soft; and the fungus moves down to the base of the petal.

At the base of the petal the fungus establishes a sclerotium. The sclerotium is a hard, black mass of mycelium destined to carry the fungus over till the succeeding year, or till the second succeeding year if conditions for its germination are not favorable during the first year. Usually the sclerotia of several bases of petals of a single flower interlock, causing a cycle of bases to adhere together and to form a club of sclerotia.

The decaying flower drops to the ground and the upper parts of the petals soon become detached from the hard, black mass of club sclerotia. This club gravitates into the soil and often becomes covered with plant debris, such as leaves.

In the succeeding year, when conditions are favorable, the buried sclerotia will produce mushroom-like bodies known technically as apothecia. These apothecia produce uncountable numbers of spores which are carried by air currents to the petals of camellia flowers and thus they start again the life cycle of the fungus. No spread of the fungus has been found to take place between flowers. The infection of each flower takes places by means of a spore carried upward from an apothecium on the ground.

Now, the most logical reasoning in finding a control for the disease points toward intercepting the spores before they reach the flower rather than covering the flower with some fungicide which will prevent invasion of the petals. Since flower opening occurs successively and over a long period of time, spraying the flowers would be a hit-and-miss method of control. In addition, the flowers would be constantly disfigured with spray material. Moreover, spraying has not appeared to be a successful method in actual practice.

The method of control which has been highly successful where it has been faithfully applied tries to prevent the apothecia from developing fully and producing spores. This method consists of spraying the surface of the ground with a chemical.

By surface of the ground is meant every square inch of the soil surface in the plant container and the soil forming the floor of the greenhouse, lath house, or open garden in which the camellia plant may be standing. Every square inch of soil within a radius of ten feet from the base of the plant must be regarded as a probable abode of the apothecia.

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[1] Although the Camellia Flower Blight is still a rare disease in Southern California it has caused considerable trouble in other parts of the state. For further information we recommend the splendid studies of H. N. Hansen and H. Earl Thomas, "Flower Blight of Camellias," *Phytopathology,* 30:166-170, February 1940; and "Camellia Flower Blight," *American Camellia Yearbook,* 1946, pp.43-45.—Ed.

In selecting a chemical the following specifications should be followed:

1. It must retain toxic properties for a reasonable period of time. Copper and mercury quickly combine with elements in soil.
2. It must not change unfavorably the pH of the soil.
3. It must not injure the roots of the camellia.

Fermate has been found to retain toxic properties for 14 days. It is acid in reaction and consequently will benefit the growth conditions of the plant. It has not injured roots of the camellia plant.

This chemical compound has been applied with effective results in the concentration of one pound per 100 gallons of water. The method of application consists of spraying the surface of the ground to the extent that it is wet, not muddy. Since Fermate settles rapidly the mixture must be agitated constantly in the spray tank.

As stated previously, the sclerotia will produce apothecia when conditions for that production are favorable. Those conditions coincide with seasonal conditions which bring on the flowers of the plant. In view of that, the frequency of application should be no less than once every 14 days. It is true that sclerotia produce apothecia quickly during and directly after a warm rainfall and for that reason an additional application should be made directly after or even during a rainfall. It is not overstated when it is said that apothecia are produced very quickly after rains, just as mushrooms are produced in a pasture.

The soil surface between containers should not be overlooked in applying the chemical. It would be well to keep all areas fairly free from plant debris, thus enhancing the chances of the chemical reaching the soil.

The above method is in reality an eradicant measure. Since some sclerotia may remain dormant for at least two years it can not be expected that eradication may be achieved in one year.

THE EDITORIAL

"Think t'was the winter of '49, or mebbe '48, we had the Big Freeze out here. Froze might nigh everything. Ruint the orchid and begonia people somethin awful. Yep, lots of folks switched to camellias after that, seein as how they was about the only real flower left that could take it."

And the old timers on the porch will nod their heads wisely and tell about how their epiphyllums froze solid black, or how the fuchsias died right down to the roots, or the way the ferns had icicles hanging on them. Somebody will remember that it was the year all those Southerners came for the A.C.S. meeting in Sacramento, and how they laughed when we told them what our camellias had just been through. "Happens all the time down South, suh. That's why we grow 'em."

If proof was ever needed of the incredible hardiness and beauty of the camellia—we have it now. In bare and blackened gardens the camellias bloom on unmindful of such transitory things as a "Big Freeze," the passing of a government in their homeland, or the petty cares that afflict you and me. And it will be so for generations to come. These shrubs we cherish will live on to bring beauty and inspiration to our children and their children after them. No other plant grows old so gracefully and confidently as the camellia, and so too, perhaps, the people who grow it.

CLAUDE CHIDAMIAN

A.C.S. CONVENTION CALENDAR

FEBRUARY 25TH — 7:30 P.M. The Southern California Camellia Society will hold its Annual Affiliate Meeting at the McKinley Junior High School, Del Mar and Oak Knoll Avenues, Pasadena. All friends and affiliate members of the S.C.C.S. are cordially invited to attend. This most important event of the year was moved up to coincide with the arrival of our Southern visitors. Special flower displays and an unusually interesting program will be featured. Speakers for the evening will be W. T. Wood of Macon, Georgia, who will discuss points to be observed in judging camellia shows; C. N. Hastie, owner of famed Magnolia Gardens, Charleston, South Carolina, who will tell the history of the Gardens and of some of the great camellias originated there; and K. Sawada of Overlook Nurseries, Crichton, Alabama, who will give a short talk on hybridizing.

The Southern California Camellia Society is setting up committees for the comfort and entertainment of out-of-state guests. In the week following they will be conducted to many local points of interest to camellia lovers. The Test Garden at the Huntington Botanical Gardens will be visited and trips made to a number of the large nurseries in the Los Angeles area where many new varieties of camellias have originated. Rare and unusual plant material of many kinds will be of interest to all the visitors.

FEBRUARY 26TH AND 27TH. A Camellia Show will be held at the Glendale Civic Auditorium by the Pacific Camellia Society.

MARCH 4TH. Tentative plans for the organized trip call for leaving Los Angeles on March 4th at 8:25 A.M. on the Southern Pacific streamliner "Sacramento-San Joaquin Daylight" and arriving in Sacramento at 7:30 P.M. Advance information on all persons making this trip is requested. S.C.C.S. members desiring transportation on arrival in Sacramento should make arrangements for such accommodation by phoning Dr. David W. McLean, Director for California—American Camellia Society, SYcamore 6-2353 or DOuglas 7-2703 at once.

The Directors of the American Camellia Society may be called into a night session on March 4th to handle important business.

MARCH 5TH — 9:30 A.M. The Board of Directors will meet at the Municipal Auditorium, 16th & J Streets. The general membership meeting will convene at 2:00 P.M. with Director and Committee reports being made to the general membership. Subjects of interest to all persons interested in camellias will be discussed.

MARCH 5TH — 2:00 P.M. Grand opening of the "Silver Anniversary Camellia Show" of Sacramento, the "Camellia City." The show will be held in the Municipal Auditorium. It will also be open to the public on March 6th from 10:00 A.M. to 9:00 P.M. There will be no admission charge.

MARCH 5TH — 6:30 TO 8:00 P.M. (Tentative) Camellia Dinner at the Hotel Senator, 12th & L Streets. Following the dinner an open meeting of the membership will continue in the hotel dining room.

MARCH 6TH. Out-of-state guests will be shown old camellia plantings in Sacramento, for which it has been called "The Camellia City" for forty years, and the largest camellia of record in the United States, at Hood 15 miles below Sacramento on the Sacramento River. This tree exceeds twenty-eight feet in height. Other specimens in the group range from twenty-two to twenty-five feet. The memorial grove of camellias in Capitol Park will be visited. This park contains about 1,600 specimen camellias including 600 varieties.

The group intending to visit San Francisco may leave Sacramento on March 6th on the 5:25 P.M. Southern Pacific train "The Senator" which will arrive in San Francisco at 7:55 P.M.

MARCH 7TH. The Northern California and Santa Clara Camellia Societies are planning a tour which will include Golden Gate Park, San Francisco, and camellia gardens and nurseries between San Francisco, San Jose, and Oakland. Guests from out-of-state will be called for about 9:30 A.M. Exact time and place will be announced later. The tour will end in Oakland where a joint meeting of the two societies will be held. This promises to be an outstanding meeting and is scheduled for 8:00 P.M.

The Northern California Camellia Society will hold its annual Camellia Show on February 26th and 27th and visitors who desire may arrange to take an overnight train from Los Angeles to Oakland (or San Francisco). This will permit viewing the Glendale show on February 26th and the show in Berkeley on February 27th.

Visitors from the Northwest will find it worth their while to join the group at Los Angeles. If they find that this will not be possible, they should join the group in Oakland, either for the Camellia Show on February 26th and 27th or for the tour and meeting on March 7th.

The Santa Clara County Camellia Society invites all visitors to remain over and view their show, which will be held on March 13th in San Jose.

AMONG THOSE PRESENT

D. G. MILBRATH, Plant Pathologist for the California Department of Agriculture, continues the discussion of camellia blight control begun by our Horticultural Research Committee in the Bulletin, December 1945, pp.3-4.

JERRY OLRICH is State Gardener at Sacramento, but his efforts on behalf the Test Garden, his delightful "Camellia Ramblings" in the Bulletin, and his untiring interest in all our activities have made him one of the best friends the S.C.C.S. has ever had.

O. E. HOPFER who leads the symposium on grafting has made a particular specialty of camellia propagation. His many articles in *Sunset* and other magazines have established him as one of the West's best known experts in this field. Assisting Mr. Hopfer we have the following Bay Area growers: Dr. Herman V. Allington, Oakland; Gordon Courtright, East Bay Nursery, Berkeley; and W. H. Hall, Camellia Hall Nursery, Sacramento.

LIBRARY REPORT

At a recent meeting a member hurried up breathlessly to Mrs. C. M. Gale, our Librarian, and said: "I can't stay for the program tonight because I have another engagement, but I came down especially to borrow a book from the library." Fortunately the book was there and he signed for it and went on his way.

Such episodes are common now at every meeting, for under Mrs. Gale's capable direction our library has made tremendous gains in size, service, and popularity. To keep pace with this increased activity the Board of Directors recently asked the Editor and the Librarian to submit a report suggesting ways and means of improving the Society's collection. That report is shown below.

Although a generous appropriation was voted by the Board for the immediate purchase of the most necessary items, it is hoped that many of our members will wish to add to the library by turning over any duplicate copies of the following they may have or by assisting in the purchase of specific items. To avoid unnecessary duplications (only two copies of each title are needed), those interested in this project should communicate with Mrs. C. M. Gale, 40 N. San Rafael Ave., Pasadena 2, Calif., SYcamore 6-3740.

TO: Board of Directors, S.C.C.S.

SUBJECT: Recommended camellia book titles for the library.

American Camellia Society. THE AMERICAN CAMELLIA YEARBOOK. Gainesville, Fla.: American Camellia Society, 1946. $2.00 (to members). 117pp., illus.

*_____. THE AMERICAN CAMELLIA YEARBOOK. Gainesville, Fla.: American Camellia Society, 1947. $3.00 (to members). 186pp., illus.

*_____. THE AMERICAN CAMELLIA YEARBOOK. Gainesville, Fla.: American Camellia Society, 1947. $3.00 (to members). 225pp., illus.

*Berlese, Abbe Lorenzo. MONOGRAPHY OF THE GENUS CAMELLIA. Avery Island, La.: E. A. McIlhenny, 1945. $3.50 110pp. Reprint of the Henry A. S. Dearborn trans., Boston, 1838.

Chandler, Alfred and William Beattie Booth. ILLUSTRATIONS AND DESCRIPTIONS OF THE NATURAL ORDER CAMELLIAE. New York: American Engraving Society (Andres, Inc., distributor), 1944. $25.00 Facsimile of the 1831 London edition, 12 hand colored folio plates, five pages text.

Davis, Ben Arthur. AZALEAS AND CAMELLIAS FOR THE GARDEN. Meridian, Miss.: Hope Haven Gardens, 2910 - 38th St., 1947. $1.00. 99pp., illus.

English, L. L. and G. F. Turnipseed. INSECT PESTS OF AZALEAS AND CAMELLIAS AND THEIR CONTROL. Auburn, Ala.: Alabama Polytechnic Institute Agri. Exper. Sta., Circular 84, April 1940. Free. 18pp., illus.

*Gerbing, Gustav G. CAMELLIAS. Fernandina, Fla.: G. G. Gerbing, 1943. $15.00. 264pp., illus.

*_____. CAMELLIAS. Fernandina, Fla.: G. G. Gerbing, 1945. $10.00. Loose leaf binder, 37 color plates with descriptions.

Halliday, Robert J. PRACTICAL CAMELLIA CULTURE. Crichton, Ala.: Robert O. Rubel, Jr., 1945. $2.00. Reprint of the 1880 Baltimore edition. 141pp., illus.

Hume, H. Harold. AZALEAS AND CAMELLIAS. New York: Macmillan, 1931. $2.75. 90 pp., illus.

_____. CAMELLIAS IN AMERICA. Harrisburg, Penn.: J. Horace McFarland, Co., 1946. $25.50. 350pp., illus.

McIlhenny, Edward Avery. 700 VARIETIES OF CAMELLIAS. Avery Island, La.: E. A. McIlhenny, 1941. 50c. 19pp.

Oregon Camellia Society. CAMELLIAS AS A HOBBY. Portland, Ore.: Oregon Camellia Society, 1945. 25c. 16pp.

_____. CAMELLIAS AS A HOBBY. Portland, Ore.: Oregon Camellia Society, 1947. 25c. 32pp., illus.

*_____. CAMELLIAS ILLUSTRATED. Portland, Ore.: Western Trail Publishing Co., 1948. Paper $4.00, Cloth $5.00. 150pp., illus.

*Pacific Camellia Society. CAMELLIA NOMENCLATURE. Glendale, Calif.: Pacific Camellia Society, 1946. $1.00. 39pp.

Phelps, Mrs. Sheffield. A CAMELLIA NOTE BOOK. Augusta, Ga.: Privately printed gift book, n.d. Out of print. 55pp., illus.

River Oaks Garden Club. CULTURE OF AZALEAS AND CAMELLIAS. Houston, Tex.: River Oaks Garden Club, 1938. 25c. 11pp., illus.

Rubel, Robert O., Jr. CAMELLIA CULTURE UNDER GLASS. Crichton, Ala.: Robert O. Rubel, Jr., 1946. $1.00. 48pp., illus. Out of print .

Scott, John M.. RAISING CAMELLIAS AND AZALEAS. Mobile, Ala.: John M. Scott, 1947. $1.00. 28pp., illus.

Smyth, William B. CAMELLIAS — HISTORY AND CARE. Ross, Calif.: W. B. Smyth Nursery, 1943. 25c. 11pp.

*Southern California Camellia Society. THE CAMELLIA — ITS CULTURE AND NOMENCLATURE. Pasadena, Calif.: Southern California Camellia Society, 1947. $1.00. 67pp.

*_____. CAMELLIAS. Pasadena, Calif.: Southern California Camellia Society, 1946. $1.00. 24 pp.

*Verschaffelt, Alexandre. NEW ICONOGRAPHY OF THE CAMELLIAS. Tr. E. A. McIlhenny. Avery Island, La.: E. A. McIlhenny, 1945. $3.50. 318pp. Text only, no plates.

Waterhouse, E. G. CAMELLIA QUEST. Sydney, N.S.W.: Ure Smith pty., Ltd., 166 Philip St., 1947. 50s. 48pp., illus. Limited edition, out of print.

Wilmot, Roy J. CAMELLIA GROWING. Gainesville, Fla.: U. of Florida Agri. Extension Service, Bul. 130, 1946. Free. 19pp.

It is recommended to the Board that as many of the above titles as possible be added to the library. This may either be done by direct purchase or by soliciting gift donations from the membership. Wherever possible, at least two copies of each item should be acquired. The above is a complete list of all available titles in English.

MRS. C. M. GALE
Librarian, S.C.C.S.
CLAUDE CHIDAMIAN
Editor, S.C.C.S.

* These items are now available for circulation. In addition there are a number of periodicals, catalogs, and bulletins in the Society's collection.

JANUARY MEETING NOTES

As arranged by Howard Asper, our Program Chairman, three prominent local nurserymen discussed various problems of camellia culture at the membership meeting Thursday, January 13.

Julius Nuccio discussed the propagation of camellias by cuttings. He advised that the amateur propagator use fully matured material which is available in the summer months, especially in July. The average grower, usually limited in his equipment to the ordinary coldframe, will probably find the summer period the most advisable. But if he is fortunate enough to have an apparatus in which there is bottom heat, his propagating can probably be done at any time of the year. It is of vital importance that all the equipment be clean and that there be good drainage in the rooting medium. This may be either good clean sand or, if one prefers, a mixture of sand and vermiculite or a mixture of sand and peat moss. Mr. Nuccio prefers the latter mixture in even proportions. He stated that he felt such a medium produced a better root system.

The sand must be clean. Ordinarily, the contaminated sand can be washed out by putting it in a deep container, shoving the hose down to the bottom of the sand and letting the water run. The overflow will in ten or fifteen minutes get the objectionable dirt out of the sand.

Normally the cuttings are matured when the wood is brown. If the wood snaps when bent it should be in proper condition. Green wood should not be used. Mr. Nuccio prefers a four-leaf cutting, the bottom two leaves of which should be removed. Such a cutting usually has more than one growing eye and will result in a bushier specimen. If many cuttings are to be used and they are all taken from the parent plants at once, they should be wrapped in a damp cloth to prevent drying.

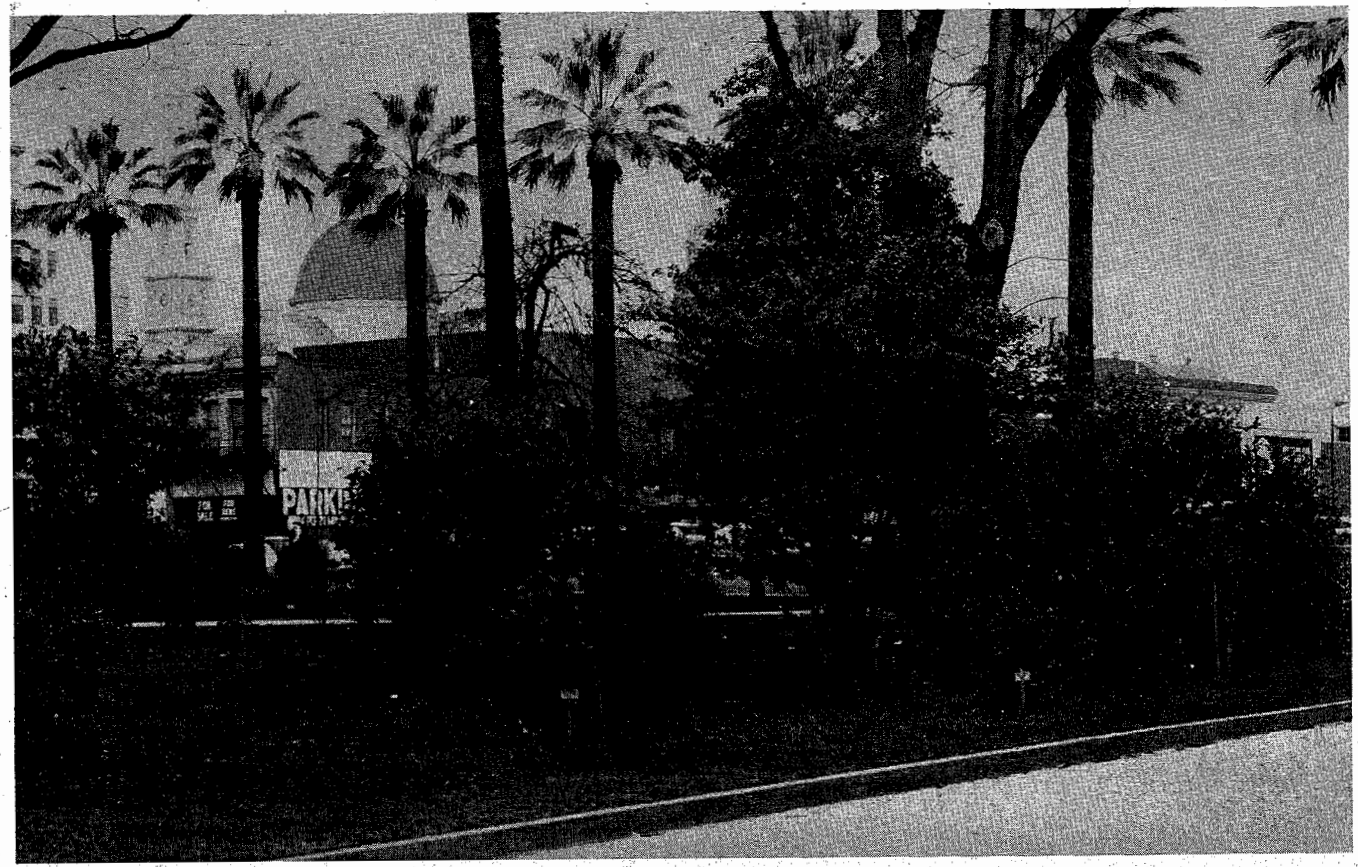
Mr. Nuccio recommend that the amateur should not put more than 50 to 75 cuttings in an ordinary flat and that the rows should not be close together. Professional growers, in the interest of conserving space are apt to crowd their cuttings more closely together. The amateur should keep his cuttings at least three inches apart.

After placing each row of cuttings the ground should be packed down solidly with a piece of 2 x 4. The cuttings should be planted about an inch to an inch and a half deep and the flat then placed in the coldframe. Every effort should be made to syringe the flat containing the cuttings slightly twice a day in order to maintain humidity. Continue this moistening the first ten to fifteen days. After that not much water should be needed if the coldframe has been properly built to retain a high degree of humidity. Thereafter very little watering should be necessary—possibly every week or two weeks. The sand should be kept moist but not too wet.

If any of the cuttings die or the leaves drop off they should be removed immediately from the coldframe. Normally the cuttings should be rooted in ten to fourteen weeks. While some of the commercial growers, in an effort to accelerate rooting, use hormone compounds, Mr. Nuccio stated that his nursery is in no particular hurry. He gets just as good results without the use of such treatments, although the rooting may take a little longer.

Mr. Nuccio leaves his coldframes exposed to early morning and late afternoon sun, but thinks they should be shaded during the heat of the day. Normally one layer of burlap should be sufficient for this purpose although in the event of an unusual hot spell some additional shade may be necessary. An occasional airing of the coldframe is beneficial.

(Continued on page 19)



PARTIAL VIEW OF THE NATIVE SONS AND DAUGHTERS GROVE STARTED IN 1940. EACH OF THESE LARGE TREES CAME FROM SOME PIONEER'S HOME.

CAMELLIA RAMBLINGS . . .

(Continued from page 4)

We have lost three trees in moving—a Pink Perfection, a Purity, and a G. W. Towle. The latter has a very interesting story attached to it and here is how it was told to me. G. W. Towle resided in San Rafael and worked as a Custom's Inspector in San Francisco. In the 1890's a ship came in from China and passed through customs after a thorough inspection. A few days later as Mr. Towle was walking down the pier he noticed some plants sitting in a corner behind some trash and boxes. Being a lover of plant life he decided to investigate and find out who these plants belonged to and why they hadn't been called for. Mr. Towle, being a thorough individual on the job, unwrapped one of the plants which had a fairly good sized root ball and to his amazement some tins of opium fell to the ground. He replaced the opium and put the plant back with the others and reported to his superiors. An officer was placed on watch to arrest anyone who tried to pick up these plants. After about ten days of waiting, Mr. Towle was told he could have the camellias and he took them home and planted them in his yard. Out of three plants one grew into a fairly large tree.

After Mr. Towle died, his widow moved from her home into smaller quarters, and the tenants who occupied the old place neglected it rather badly. Mr. Newell Vanderbilt, who was doing quite a bit of research into camellia nomenclature at that time, suggested to Mrs. Towle that she give the tree to the park. Mrs. Towle said she would consider it, and after her passing the attorney for her estate notified us that the tree was ours and for us to move it as soon as possible, which we did.

The tree was not in very good shape when we moved it, and it was planted so close to the house foundation that it was very hard to get a decent root ball. It gradually faded and within six months was dead. But it wasn't lost completely as I had two gavels made from wood and presented one to Mr. Fred Scheid who was the first president of the Sacramento Camellia Society. Today there is only a small cutting-grown plant of this camellia growing in the grounds.

In one of the drives which the Sacramento Camellia Society puts on annually, the Native Daughters of the Golden West decided they would like to plant a Camellia Grove in the grounds and dedicate each tree to some pioneer. After receiving permission from the powers that be, the grove was started with twenty-seven trees. It now contains 171 plants of about 90 varieties.

The Capitol Grounds have about 1,600 camellia plants in about six hundred named varieties. Many of these have been added in the last few years and we are very grateful to all our donors for their generosity.

Many of you remember lovable James Rolph who was mayor of San Francisco for many years before being elected Governor of our great State. Governor Rolph was a real lover of camellias and wore one every day when they were in season. He always preferred white. Somehow he never seemed fully dressed without a flower in his lapel.

There are many interesting and romantic stories about some of the old plants in the grounds and throughout the city. In later articles I will try to tell you many of them. Some I guess are a bit exaggerated, but still they are all interesting.

MEETING NOTES . . . *(Continued from page 15)*

Mark Anthony discussed grafting and post-operative care of camellias. There are two seasons of the year when grafting can be carried on successfully. Normally it is done in the period from the middle of January to the middle of March. Understock ranging in size from a lead pencil to a thirty-year-old tree can be used. Mr. Anthony prefers a caliper from ¼ to ½ inch, generally what is known as a good four-year old gallon-size plant. It is of vital importance that the understock be healthy and vigorous. There is nothing to be gained by trying to transfer a healthy scion to an unhealthy piece of understock. It simply will not work.

No fertilizers should be given the understock for five to six months previous to the time of grafting. There may be some exceptions in the case of large plants in the ground, but normally feeding will cause too much energy to be transmitted into the scions which cannot absorb it.

The scion likewise must be fresh and healthy. The sooner the scion can be applied to the understock after it is removed from the parent plant, the better. Mr. Anthony prefers the terminal bud because of its ability to commence growth at an earlier date.

Sharp implements are of extreme importance in preparing both the understock and the scion. The understock should be cut on a slant so that any moisture accumulating on the top will drain away. If it is allowed to stand on the understock, fungus is apt to result. After the understock has been cut, the wound should be smoothed off with a sharp knife. Then the understock is split to receive the scion. On sizes up to ½ inch the understock should be split down the middle. Larger material should be split toward the side, as that permits a more ready union with the cambium. The scion should then be prepared by cutting its end to a wedge-shaped point. Here, again, it is important that clean implements be used and that the fingers be kept off the freshly cut surfaces as much as possible. In matching the scion with the understock, the cambium layers must approximate each other. On small plants this probably will be accomplished if the bark of the understock and the scion meet. On larger plants the bark of the understock will be heavier than the bark of the scion and more care must be exercised. A small portion of the wedge cut on the scion should be left above the understock as this seems to promote the production of the callus and the union between the two pieces of material. After the scion is in place the understock should be securely tied with string or good natural rubber. The rubber must be fresh and natural, as old or synthetic rubber would probably break and allow the union to slip.

Mr. Anthony's experience has been that less fungus is apt to develop with a rubber tie. He doesn't use paint or tree wax at the time the graft is made as the use of such materials seems to delay the union, but he does use them when the scar starts to heal.

After the scion is in place and tied it should be covered with a clean glass jar. He then puts the plant, covered by the jar, in a coldframe or, if one is not available, in a shaded spot in the yard. It is highly important to prevent sunburn of the plant, the danger of which is, of course, accentuated by the fact that it is encased in a small glass jar. The understock should be kept on the dry side—not bone dry, but just slightly moist. It should only be watered enough to keep it in that condition. There is no reason to feed it—in fact, feeding should be avoided until the following year.

Grafts placed in a coldframe sometimes develop a white fungus which normally can be controlled by airing the plant and thus allowing the fungus

to dry. Sometimes it is necessary to wash the fungus away. For this process use a mixture of one part distilled vinegar and ten parts water applied with a camel's hair brush.

The glass bottle should be removed when the terminal bud has produced about ½ inch of growth. A close watch of the graft will have to be made to determine this as the growth is very rapid when it once starts. It usually takes about two months to begin. The bottle should be removed in the evening when it is cool so that the plant can accommodate itself to the change. If it is not removed at this time it should be removed when the first cycle of growth is complete—when it has attained about three or four inches of growth. It may be necessary, in order to provide additional room, to raise the glass bottle on blocks. More air entering the bottle through the bottom should not bother the plant in any way.

After the bottle has been removed the plant should be kept well shaded. Even in a lath house it is probably advisable to use two thicknesses of cheesecloth.

It is vital to see that a good union has taken place before the tie is removed from the understock. When it is removed the union may be covered with a tree wax or paint or similar product. If the specimen develops a tall and spindly growth, it is proper to nip the top of the shoot in order to force the plant to bush out. About the same system is used on large understock except that the cut should be on the side, and if the plant is of sufficient size a number of scions can be inserted by making several cuts in the understock.

Every possible care should be taken to select scions from plants with similar growth habits. Likewise, if a large understock is used and it is desired to make grafts on several limbs at some distance above the ground, a wall of bricks can be built around the understock. This can be, in turn, banked with dirt on the outside. When this is built up to the desired height the bottle can then be placed on the top of this wall in order to protect the plant after grafting.

Our friends in the South advocate covering the union with paint in order to keep the moisture in. Mr. Anthony has found this a desirable practice. They also use raffia for the purpose of tying the union. Although Mr. Anthony has not used it himself he thinks it should be all right. He also cuts the leaves on the scion in half if the specimen used is one with very large leaves. This is done principally to facilitate covering the scion with a relatively small bottle. Smaller leafed plants do not require such trimming.

The other period when grafting can be done is in the summer, during July after the new growth has hardened. At that time the same process is followed except that the scion is cut only on one side. The understock is not split but the bark is divided and the scion applied directly to the cambium layer under the bark.

Both Mr. Anthony and Mr. Nuccio stressed the absolute importance of cleanliness in all material used in both propagation by cutting and by grafting.

Mr. Les Marshall discussed soil mixtures and the use of fertilizers. He stated that there are three comparative things to be considered in soil: (1) drainage, (2) acidity, and (3) fertility.

It is of course desirable to duplicate the natural medium in which camellias grow. Normally they grow on hillsides where there is a high degree of humus and a natural acidity in the soil. That is not a natural condition in our Southern California soils and it is not helped by the alkalinity of the water which we get from the Colorado River. These conditions must be corrected.

Soils fall into three general classifications: (1) light, (2) medium, and (3) heavy. The first needs the addition of much humus such as peat moss or compost. Heavy soils are apt to be alkaline and acidity must be provided. Medium soil in general is quite acceptable. A mixture of half medium soil with half peat moss or leaf mold is excellent. Peat moss seems to be making friends more rapidly all the time. Mr. Marshall advocated at least ¼ peat moss with sandy soil. As he very aptly put it, "It is much better to put a ten cent plant in a one dollar hole than a one dollar plant in a ten cent hole."

Preparation of the soil for the plant is of vital importance. Peat or leaf mold should not be spared, as such preparation is very essential in producing healthy plants. In containers, ample drainage must be provided for camellia plants. A good mixture for use in containers consists of three parts good garden loam, three parts leaf mold and one part sand. This mixture should be prepared, if possible, some time ahead. It should be wet and allowed to stand for ninety days or more. If you can allow it to stand for that length of time the addition of one part dairy manure is beneficial. If you can't let it stand, forget the manure. Finally, add one cup of soil sulphur to each wheelbarrow full of prepared soil.

Not only amateurs but also professionals often do more harm than good in fertilizing. It is very easy to burn the plants with overdoses of fertilizer, so great care should be exercised in using fertilizers. The plants should not be forced by overfeeding, but should be allowed to grow naturally. If growth is not unnaturally accelerated a better plant will result. However, fertilizer leeches more readily in sandy soil, so more should be given to plants under such conditions.

Camellias properly planted in a good, rich soil probably do not have to be fed at all. Manure is an excellent food for plants in the ground, and in addition many good commercial fertilizers are available in either dry or liquid form. There is the threat of burning, however, with the use of any fertilizer. The best time for feeding is to start when the blooming ends, usually June 1, July 1 and August 1. The first feeding should be heaviest (but not too heavy). Subsequent feedings should be much lighter. No feeding should be given after the first of August. It should never be necessary to feed camellia plants the first year after they have been transferred to a larger container. Mr. Marshall advocated that the directions of the manufacturer be followed on the first feeding and that subsequent feedings be about one-half that amount.

Generally speaking, most commercial fertilizers could be applied to plants as follows:

12 to 18 inches in height—1 tablespoon
18 to 24 inches in height—2 tablespoons
24 to 36 inches in height—4 tablespoons
3 to 4 feet in height—½ cup

If plants have been burned by fertilizer it is usually too late to do anything about it. It is probably much easier to burn a plant in a metal container than in a clay or wood pot. If burning is suspected, immediately wash as much soil away from the plant roots as possible. Sometimes it is necessary to wash the roots bare. Then replant it in peat moss until the root system has had a chance to rehabilitate itself. Plants given a commercial fertilizer should be fairly wet when the fertilizer is applied and thoroughly soaked after feeding; otherwise, the fertilizer might collect in the root system and cause damage. Burning is usually evident by brown areas starting at the tips of the leaves and going back around the edges.

ularly adaptable to large understock. Then I shall call on Bill Hall of Camellia Hall Nursery in Sacramento to tell you how he and his famous father do their grafting and how they handle the grafted plants in grafting bins. Next, I shall ask Gordon Courtright, owner of the East Bay Nursery in Berkeley to reveal his secrets of grafting, laying particular stress on "after care." So, first we will hear from Dr. Allington.

TRIANGULAR NOTCH GRAFTING

By Dr. H. V. Allington

A notch graft can be used on almost any size of understock. On large shrubs several scions can be fitted around the circumference of the understock without the need of splitting it.

I prepare the scion first, cutting so as to produce a triangular wedge tapering smoothly to a point. The "outer" side of the wedge is composed of undamaged bark and cambium layer.

A V-shaped notch is then cut into the understock to fit the prepared scion. This notch likewise tapers to a point. With care the notch in the understock can be prepared to fit the scion quite accurately so that the cambium layers on scion and understock touch all around.

The scion, or scions, are then held in place with rubber bands or with string or other binding material as desired.

GRAFTING CAMELLIAS

By W. H. Hall

Ordinarily we consider that the best rootstock for grafting is a lush, well-grown plant, preferably slightly pot-bound. It is very important that the understock have a strong, sturdy root system.

If you have a camellia in your garden that you don't think much of, take better care of it before you graft onto it. I know definitely that the weak, the starved, and the unkempt camellia does not work well as understock.

GRAFTING TOOL. A number of people have already told you that a good, sharp knife is important. That is definitely true. Amateurs who have learned to use a knife—country store whittling session—know that you have to use a good, sharp knife in grafting. To protect those soft hands that don't do the kind of work mine do every day in the week, it might be a good idea to save that right thumb by using several layers of adhesive tape to protect it from cuts.

CLEFT GRAFTING. We prefer in our cleft grafting to use a slanting cut in cutting down the understock, since we have found that the slanting cut causes less of that unsightly bulge as the graft heals. Sometimes by the third, fourth, or fifth year there is nothing more than a slight waver in the line of the trunk to show where the grafting was done.

We have also found that in cutting the understock it is best to pick a smooth side for the high side in which you produce your cleft so that there will be a nice even point for a union, rather than cut where a leaf came out. That particular area of the bark is irregular and the scion does not fit quite so well.

Like Mr. Hopfer, I prefer to use only two cuts in preparing the scion, but sometimes more than two are necessary.

In taking a scion I use only one eye, rather than two or three. In the first place I am stingy with most scions if the wood is rare. In the second

place, the grafted plant is "off the ground" before it starts to branch. If three leaf buds are used, the plant will branch close to the ground. If it is a prostrate or low-growing variety, the branches droop below the pot level and it becomes necessary to prune and reshape the plant after it is well on its way. However, if you are growing in containers, you may like to have an occasional plant that grows that way since it gives that kind of symmetry that the Orientals have been famous for for centuries. However, we have found that the prettiest plant is the one that gets off the ground a bit before it starts to branch.

When inserting the scion, be sure not to put it too far into the cleft. It has been my experience that you can get by, having the cambium layer just outside the cleft but not inside. If the cambium layer on the cleft is inside the cambium layer on the scion—the bark edge of the scion being out beyond the bark edge of the cleft—the graft may take sometimes; but never have I found one to take where the scion was inserted so far that the bark layer of the scion was inside the cleft.

Bind with red rubber budding strips so as to leave no gaps and thus exclude air from the area of the union.

BINS FOR GRAFTS. At Camellia Hall Nursery we do not use bottles to cover our grafts. We use bins entirely. These bins are identical in appearance and construction to coldframes but are deeper. The bins have ordinary "barn frames" on them—comparable to window sash frames. The front part of the bin is 36 inches high and the rear portion is 42 inches high. They are 16 feet long, with the exception of one which is 8 feet in length. The width is 30 inches from front to rear.

In the bottom of the bins we have approximately 3 to 4 inches of sand which is kept moist before we insert the newly grafted plants. From then on it is only a matter of lifting the glass an inch at a time over the whole bin when airing and hardening the callus. When the temperature gets too high, we cover the bins with burlap, even after we have lifted the glass. In this way we can protect from sun without having to touch the plants.

The greatest advantage of the bins is that they may be opened for inspection without losing all of the humidity.

Our percentage of "takes" in bins has been as high as 93 per cent, which is considered to be extremely high for commercial grafting of camellias on a large scale.

GRAFTING AND AFTERCARE

By Gordon Courtright

One of the first things that I learned about grafting was the importance of practicing with a knife—not just once, but 20 to 30 times—on the same kind of wood that is to be cut in grafting. The knife blade that I use is straight on one side and sharpened on the other—like a chisel.

REMOVING MULCH FROM UNDERSTOCK. If the understock has any mulch, it is necessary to clean off this top layer. For this, we use a broad, flat chisel or a board about 1½ inches wide and scrape off the mulch as well as the top half inch of dirt.

SCION IN CLEFT GRAFTING. When using a two-eye scion, or longer, one bud eye should be set down into the cleft far enough to meet the cambium layer. The scion will take much faster if the eye is set into the cambium layer because there is about forty times as much growing tissue at an eye as on any other part of the cambium layer. It has been our experience that the graft not only takes faster but that it heals over more quickly.

LARGE UNDERSTOCK. When large understock—¾-inch in diameter or larger—is being used, it is necesary to keep the gap open while inserting the scion. I use a sharpened plant label as a wedge.

On very large understock—2 inches or so in diameter—the label may be left in the split to prevent the scion from being crushed. We have found that it is not necessary to remove the label from that size understock at all, so long as the label is broken off flush with the understock after growth has started.

TYING THE GRAFT. To tie the graft, I use string. Personally, I do not like budding strips. I believe callusing sets in faster when the wound is not entirely covered. Besides, we can watch the union between the scion and the cambium layer after it has been tied to see that it is still in the right place. Other speakers have mentioned that the graft should be covered completely to keep the air out; but I have not found this necessary, grafting in the greenhouse. We always use a jar to cover the graft and that seems to give enough protection.

MULCHING GRAFTED PLANT. After the plant has been grafted, ½ to ¾ inches of sand, leaf mold, or peat—or better, a mixture of all three—is used to keep the air out and make a good "seal" for the jar.

AFTERCARE OF GRAFTS. All too many plants are lost after they have been properly grafted because of improper aftercare.

Since we keep our grafts in the greenhouse until August, we have no trouble protecting them on cold nights and our plants keep growing right through the season.

The plants are watered very thoroughly when they are grafted, but after that, as little as possible until they have gotten a good start. We water very little and keep the grafts on the dry side. After they have been in about a month, we watch them carefully and do not let them get too dry. I have seen many grafts ruined by too much water. Dampness tends to cause mold to develop.

If mold should begin to form, it must be taken off. We use a 15c water color brush and a 5% solution of white vinegar in water to remove the mold. This treatment does not seem to injure the plants.

SHADING THE GRAFTS. We cover our jars in the greenhouse with a long piece of cheesecloth to shade the plants and to prevent the glass jars from acting like a magnifying glass on bright, sunny days. After the jars are taken off, we still use the cheesecloth to shade the young plants for at least a month.

REMOVING THE JARS. The jars are taken off the grafted plants after the callusing has taken place and as soon as possible after the plant starts to grow. We remove the jars during the morning to give the plants a chance to become accustomed to outside air before night comes. If there is any sign of wilting, we place the jar right back on for a few days—then we try removing it again.

IMPORTANT NOTICE

The February meeting of the Southern California Camellia Society will be held on Friday, February 25th, at the McKinley Junior High School, Del Mar and Oak Knoll Avenues, Pasadena. Important speakers from the South and special flower displays will be featured. Program begins at 8 P.M.

COME AND BRING YOUR FRIENDS