THE CAMPULAL REVIEW

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C. RETICULATA—'MISS TULARE'

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Southern California Camellia Society Inc.

An organization devoted to the advancement of the Camellia for the benefit of mankind — physically, mentally, and inspirationally.

The Society holds open meetings on the Second Tuesday of every month, November to April, inclusive at the San Marino Women's Club House, 1800 Huntington Drive, San Marino. A cut-camellia blossom exhibit at 7:30 o'clock regularly precedes the program which starts at 8:00. Application for membership may be made by letter to the Secretary. Annual dues: \$9.00.

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THE COVER FLOWER

C. RETICULATA—'MISS TULARE'

'Miss Tulare' is a chance seedling of 'Crimson Robe.' The flower is a bright red to rose red, large to very large, rose form double to full peony form. The plant has a vigorous, upright growth and it blooms in mid-season. The seedling first bloomed in 1968 and it has since been propagated by Nuccio's Nurseries. It was registered in 1975 and was released for sale in the fall of 1976. Photo courtesy Nuccio's Nurseries.

CAMELLIA NOMENCLATURE 1976 EDITION

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THOUGHTS

from the editor

My wife says that I am getting cantankerous and grouchy! You know, she may be right! I find myself, more and more, having to resist the urge to "write a letter to the TIMES" about something I have read that "bugs" me. I, angrily, turn off the T.V. and stalk out in a rage over some program, or in protest of some commentator's remarks. I "boil inwardly," cash in hand, while waiting for someone to write a check and have it certified, at the check-out stand. And if someone honks his horn in the traffic behind me, the top of my head literally ricochets around inside the car!

My cantankerousness has even crept into my camellia hobby! Woe unto he who may be late with a promised article for the REVIEW! Curses on the guy who enters his bloom in the wrong Division. Down with the Chap who challenges my beliefs about the propagation and culture of seedlings. I even had one of those plaques on the wall of my office which was lettered in gothic script and which read: "Nobody is perfect! Each one of us is a mixture of good qualities and some, perhaps, not-so-good qualities. In considering our fellow man we should remember his good qualities and realize that his faults only prove that he is, after all, a human being. We should refrain from making harsh judgment of a person just because he happens to be an unenlightened gibberelic acid freak!"

Well, I chanced to run across something on New Year's Day that has almost brought me back to my senses. And now, every time I get a little "beaky" or seem to think that I have my "nose bent," I drag it out and read it. I want to share it with you. Perhaps it will help you out over the rough spots. For one thing, my wife is a lot happier for my having found this motto.

A MOTTO FOR 1977

Mend a quarrel.

Search out a forgotten friend.

Dismiss a suspicion and replace it with a trust.

Write a letter to someone you miss.

Encourage a person who has lost faith.

Keep a promise.

Forget an old grudge.

Examine your demands on others and yow to reduce them,

Fight for a principle.

Express your gratitude.

Overcome an old fear.

Take a minute to appreciate the beauty of nature.

Tell someone you love them and tell them again and again and again.

Bill Donnan

"SO YOU WANT TO WIN A TROPHY"

By WILLARD F. GOERTZ

"After visiting a number of camellia shows in the springtime, a new camellia Nut is born. He is enthralled with the beautiful blooms—like he has never seen before—and now he wants to start seriously growing camellias and do whatever necessary to win trophies next year and have a lot of fun in the meatime." This was the hypothetical situation posed to us by the Editor of Camellia Review with a comment. "Please write out as plainly as possible what you think this new hobbiest should do."

Okav. Mr. C. Nut. first of all join a camellia society where you will make friends who will later help you to learn to graft and provide scions of hard-to-find varieties. They will show you how to grow seedlings and other details that are involved to fully participate in the hobby—with an eye toward your reaching that trophy table as soon as possible. Typically, in Southern California, you will have growing around your house a number of large, old, camellia plants most of which have not produced blooms like you saw at the shows; and, hopefully, you will have space to plant some new ones. It is April and your first chore is to carefully prune all of the existing plants—cutting out all the weak and dead wood, thinning out so that the inside of the plant gets plenty of light. Be careful to shape the bush to have an artistic appearance, leaving no branches crossed or closer than 14 inches to the ground. Next, visit a good reliable camellia nursery and buy those varieties you made a list of at the shows. Procure plenty of peat moss and ground bark for planting as follows:

Mix three parts light sandy soil, two parts ground bark and one part peat moss which has been soaked and squeezed. In the sunnier spots plant the dark reds and the reticulatas. In the shady spots plant the whites and light pinks. Preferably provide a shade house which will allow you to have the maximum number of plants, especially in containers. When planting in the ground, dig a hole twice the size of the root ball. The bottom of the hole should be solid to preclude any settling—and fill the annulus with the previously prepared mix. Then give the plant a good soaking.

The older plants should be fertilized right after pruning in April using a blend of five parts cottonseed meal with one part blood meal. The newly planted beauties should receive their first food three months after planting. Here are my recommended

rates of fertilizing:

Two cupfuls for the large older plants in the ground, three tablespoons for five gallon containers, two tablespoons for two gallons and one tablespoon for the one gallon plants. Another application of cottonseed meal ONLY should follow about July first. That is all the fertilizing I do except perhaps a little iron chelate to container plants in September. Some folks like to feed this time of year with a low nitrogen fertilizer.

Watering is a never ending job as we don't get much rain (if any) between April and November. You can neglect almost any phase of camellia culture but if you let your plants dry out completely (even once) your blooms will not reach the trophy table. There is a happy medium, of course, and potted plants—especially reticulatas—must not be kept too wet. Good drainage is very important.

In July, I suggest you get some help from one of the "experts" in the Society and cut off one of the old plants in the ground which is healthy but has not been producing. Grafting scions of a new variety will (hopefully) result in a beautiful large camellia with lots of fine blooms; a good source for entering those multiple classes in shows. During the summer months look for excess growth and surplus branches, and keep them contained. In other words, continued light pruning is necessary until the blooms appear. This goes hand in hand with disbudding. If you want show-winning blooms you must have only one flower bud to each branch terminal. Surplus buds means smaller blooms. Another important phase of good culture is to move plants up to larger conntainers before they get too root bound. When watering, you will find a few which dry out faster than the rest. These can be checked as candidates for re-potting by tapping the plant out of the tapered pot. Repotting may be done at any time of the year, but only go up one pot-size in the process.

One or two applications of Spectrocide or Malathion spray in June or July will usually take care of what few insects are found on camellias.

Our first show comes early in December which is too soon for most varieties to be in normal bloom, so it will be necessary to stimulate the flower bud growth with gibberellic acid. About the first week in September procure a 4-gram gib tablet, break it in half, putting 2 grams in a 4 or 6 ounce bottle, add two and one-half ounces of distilled water and shake well. Keep refrigerated and after a few hours, and several shakings, this solution may be strained through a silk stocking (or similar material) to eliminate the residue which has mostly settled to the bottom. "Gib" adds to the growth regulators already in the plant, and when properly applied will cause camellia blooms to mature earlier (as much as 2 or 3 months in some cases) and considerably increase normal size. To apply, break out (not off) the growth bud at the base of the flower bud. Fill the resulting cavity with the gib solution, using an eyedropper or hypodermic needle, being careful not to spill over.

It usually takes anywhere from 35 to 120 days to bring a flower bud to bloom with gib treatment. Reticulatas require much more time, e.g., 'Crimson Robe' 'Cornelian,' 'Moutancha' and some others are seldom seen at the December show as these varieties require 4 months or longer to mature when treated in September. Reticulata hybrids such as 'Mouchang,' 'Valley Knudsen' and 'Lila Naff' and many others, will bloom in 50 to 80 days. Of course, normally early bloomers such as 'Debutante,' 'Alba Plena' and 'Ballet Dancer' require only 30-35 days. My experience indicates that it is not practical to gib much before September 1st nor later than January 15th. There seems to be no scientific answer as to exact time required to mature camellia blooms with gib since weather, size of bud, and the time of the season, as well as other variables, all have an influence.

A good plan is to gib one or two buds each week on each larger plant and here is a way to make those older plants, which you pruned in April, to start paying dividends. Please do not apply gib to any small camellia plants—wait until they are large enough to produce six or more flower buds and then treat only one or two during the season. Please, also, never try to substitute gibbing for good culture.

It is now getting near show time. Do not let the cool weather fool you into neglecting your watering. As the blooms (which are mostly water) begin to open, moisture is very important. In real dry weather, for the several weeks before a show, keep the ground damp to provide humidity. Keep removing surplus buds as you find them, and every few days check around with a pocket full of clamptype clothespins. As blooms start to develop, pin back whatever leaves might interfere as it is impossible to win that trophy with a bloom that has even a single blemish.

Procure some airight plastic boxes large enough to accomodate your blooms, and if you have the use of a refrigerator (kept at 40 degrees F) you can start cutting blooms 4 or 5 days before the show. Unless you have a very large garden and hundreds of plants, it is almost impossible to come up with 40 or 50 perfect condition flowers all picked the morning of the event. Small plastic cups nested in polyester fiber inside the plastic box should be filled with a solution containing napthalenne acetic acid. (Floralife is a good commercial cut flower preservative.) The stem of the bloom is placed in the cup containing this solution. The air tight lid is placed on the box containing the cut blooms and the box is then placed inside the refrigerator until the morning of the show. Except on a cool and damp day, all blooms should be picked early in the morning otherwise they will tend to be soft and will not last. Transporting your trophy candidates should be done with great care and placed in containers provided on the show tables, being sure to place the flower with its best face forward. One or two leaves always enhance the

You would be smart to get a job of clerking, to be right with the judges and listen to their chatter regarding which bloom is best and why. This will give you further guidelines for trying to grow those winners for the next show or the next year.

Okay! So you won a nice trophy, and it was a great thrill. But when you now look back you will agree that the most rewarding thing during the year of activity was seeing the result of your tender-loving-care of the plants, the beautiful camellia blooms you took between show dates to other less fortunate folks, the extra bonus of the thrill of grafting new varieties onto old plants, and, most of all, the comradeship with your newly found friends in a common endeavor.

You will now also agree that you could not possibly find a finer hobby than growing and showing camellias.

CALLING ALL NOVICE CAMELLIA HOBBIESTS

This announcement should be called to the attention of all camellia people who have never won a silver trophy at one of the Camellia Shows. Mark the date of March 12, 1977. This year's Descanso Camellia Show, sponsored by the Southern California Camellia Council, will feature a new Novice Division.

Judy Simmons, Show Chairman, has announced that there will be a separate Division in this year's show for novice camellia hobbiests. A separate display area will be set aside with officials present to assist in the entry of blooms. Trophies will be awarded for: (1) The best medium to large camellia; (2) the best small to miniature camellia; and (3) the best tray of three camellia blooms.

The Novice Division is open to anyone who has never won a "silver" trophy at one of the camellia shows. The new division has been established in an attempt to entice more exhibitors, and particularly new exhibitors to enter blooms in the Descanso Show.

It is hoped that the faithful camellia "experts" who show flowers at every show and who manage to win trophies, will bring a friend or a neighbor, and introduce him to the exciting world of showing his camellia blooms.

NOTICE

There will be a plant sale in connection with the Descanso Show. If you can donate plants please contact Judy Simmons or George Lewis.

CAMELLIA CLIPPINGS

By BERNICE GUNN

Who says diets must be bland? A dash of real spice on the Camellia menu is an A.C.S. Convention. It's an extra "bonus" when one of our California cities is chosen to host the gathering of the clan. Every day is count-down to our meeting in Gallo Land, or as it is better known, Modesto. What a great way to renew old acquaintances and to make new ones. I'll be there to welcome our southern cohorts when the "Chattanooga Choo-Choo" pulls into the station.

The first of these affairs I attended was the one held at the Disneyland Hotel. Al and I were new in the hobby, hardly knew anvbody and were chomping at the bit. We arrived hours before anybody else, and sat in our room just looking at each other waiting for the action to start. Well the action did finally start, with the force of a small atom bomb. It is the first time I have ever seen a drag race with wheel chairs in a hotel lobby. We were on our good behavior and didn't join the hi jinks, but we sure enjoyed watching it all. To us it was a highlight of our life. We were in such awe of all of those famous people, we were sorely tempted to ask for autographs.

Friendships cemented and in-theknow, we attended our second meeting held at the Huntington-Sheraton Hotel. The fun and camaraderie was still at the top of the agenda. The two things that made the biggest impression on us was how beautifully the dining room was decorated for the Saturday night banquet, and the home dinners. It was great fun looking forward to having all of those wonderful people into our homes for a little "out west" hospitality. The Pasadena area was such a great focal point for our visitors to take in Southern California camellia "gotta-sees" — Descanso Gardens. The Arboretum, Huntington Gardens, Nuccio's and gardens of the top growers in the west.

The next two conventions attended were in the beautiful Camellia city of Sacramento. A natural setting for such an affair. Just riding around the city and seeing those large old favorites growing all over was a joy. Needless to say, there is always a highlight of the meeting, and a certain bus ride is unforgettable. There are three women in the hobby that just can't behave when they are let off the leash. A visit to a winery before we boarded the bus back to the city didn't help matters a bit. The poor sightseers trying to catch forty-winks were hit with three alarm clocks going off at once and continuously. We had a lot of laughs and enjoyed ourselves immenselv.

In every city we have met, the local people have put a lot of time and effort into making us welcome, comfortable and thoroughly entertained.

SEE YOU IN MODESTO!

The lack of fragrance in camellies has been regretted by growers of this beautiful flower for over a hundred years.

In Italy, early attempts to change this were made by grafting camellias to rose trees and by sprinkling the surrounding earth with highly perfumed solutions. Nothing succeeded.

Oddly enough, while all this effort was going on in Italy, camellia Sasanqua was being cultivated and dried in China to mix with tea to "give it fragrance".

It is possible that the camellia in its native habitat was scented. But in all of Europe not one camellia was truly fragrant.

Grief can take care of itself, but to get the full value of a joy you must have some one to divide it with.

CHANGING TASTES IN POPULAR CAMELLIAS

By A. W. JESSEP

Victoria

Ed. Note: This article is a reprint from Camellia News, the publication of the Australian Camellia Research Society, Vol. 59, March 1976.

During the general evolution of plants there are variations brought about by environmental conditions and the 'Survival of the Fittest' as set out in Darwin's Theory of Evolution. When a group developed similar characteristics which distinguished it from all other plants, it is eventually given a family name such as Theaceae, and within that family a group having more confined characters, is designated a genus such as Camellia, within the Theaceae family.

The name Camellia was given by Linnaeus, the founder of systemic botany, in honor of Kamel for his botanical work in the Philippine Islands, although it is thought that Kamel had never seen a camellia.

According to the Age and Area hypothesis, enunciated by the British Botanist Willis, the camellia is comparatively a young genus as it is naturally confined to a small area of South East China and nearby islands. The Ulmus (Elm) is a native of practically every country in the northern hemisphere so it would be of an earlier age. The writer suggests, without any special scientific foundation, that the comparative youthfulness of the camellia genus may be one reason for the rather frequent mutating on account of the instability still persisting of the hereditary characters. The original camellia had a single flower form and with the gradual metamorphosis of the stamens to petaloids and petals, the double flowers were obtained. In some blooms of 'Daitairin.' 'Lady Clare' and others the change may be observed.

Although camellias have been recorded in their ancestral home of South East China for many centuries, it was not until the late 1700's that the first plants arrived in England,

then to Europe where they became popular, from Belgium to France, Italy, Spain and Portugal. Grown outside in the southern area and elsewhere under protection, seeds were produced both naturally and by hand pollinating, which resulted in such popular cultivars as 'Elegans,' 'Bella Romana,' 'Virginia Franco' and 'Paolina Maggi.' Both the imported and selected locally raised seedlings were double flower forms, and until about 1860 they were thought to be the only ones worth growing; the old European catalogues indicate this. After the 1860's camellias as garden plants were on the wane; it was not until the early 1900's that their beauty began to force them into gardens again. One of the reasons for this decline was the importation of rhododendrons from Hooker's collecting tour to the Himalayas (India) in 1849-51. The environmental conditions of England suited these Indian rhododendrons and they acclimatised quickly; the trusses of bright flowers made them popular garden subjects. In Australia, easily grown flowering shrubs replaced camellias because it was thought they were too 'hot tender' and only suitable in bush houses; in Australia water was at a premium during this period.

About 1930 a revival was taking place in the U.S.A., spreading to Australia where investigational work, particularly on nomenclature (in a sorry state) was beginning to bear fruit. By 1945 the revival of Australia was well under way; the cheaper method of propagation by cuttings, better understanding of culture and natural beauty reinstated camellias as garden plants with a continued increase in

popularity.

About 1940 in England, the pro-

duction of the williamsii hybrids was a great stimulus; the growth was vigorous, blooming prolific and less formal with pastel pink tones; the plants withstood the cold better especially in the United Kingdom. When the reticulatas were introduced from about 1950, hybridizers soon realised their potential, and as they crossed readily with other species of camellias, thousands of hybrid seedlings have been obtained, the best having been distributed.

The renewed popularity of reticulata hybrids is due to ease of production, less formality of the 20th century, interesting and intriguing production of mutants, better understanding of cultural requirements and

beautiful flowers.

Japonicas still hold pride of place but the formal ones have lost ground to the informal type such as 'Elegans,' 'Betty Sheffield,' 'Guilio Nuccio,' 'Aspasia,' and 'Tomorrow' groups and to the dual color forms of 'Ballet Dancer' and 'Spring Sonnet.'

The hybrids with reticulata parentage have made great progress since first introduced with William Hertrich in 1960; it is too early to predict their future with accuracy. The popularity of vigorous plants with large, profuse flowers like 'Howard Asper,' 'Valentine Day' and Descanso Mist' seems secure, but there are certain disadvantages for decorative purposes—stems not strong enough to show off the blooms, especially when unprotected.

The singles and semi-doubles e.g. 'Alba Simplex,' 'Trumpeter,' 'Spencer's Pink' and 'Magnoliiflora' have special appeal to floral arrangers.

During the past few years more miniatures are being grown with some one hundred cuultivars available in the U.S.A. and twenty or so in Australia, where there are now classes for miniatures at some shows. They have their advocates and uses but are not likely to become very popular garden subjects. The formal doubles will always have their admirers, and what can be more beautiful to formally-minded people than a good bloom of old 'Fimbriata,' 'Nuccio's Gem,' 'Mrs. H. Boyce,' 'Sawada's Dream' and 'Commander Mulrov.'

The writer's garden shows a catholic taste with no one type predominating, and he loves all camellias.

THE SYNERGISTIC EFFECT OF AUXIN IN CONJUNCTION WITH GIBBERELLIC ACID

By A. G. STANLEY

All plant hormones in nature are constantly interacting with one-another. So, when using them in unnatural ways it would stand to reason that their results would likely be increased when used in conjunction with each other.

In the January 1977 issue of Camellia Review (vol. 38 No. 3) a method of nurse-seed grafting was described by Alice Spragg of Australia. In the article she described grafting the cotyledans of newly germinated Camellias to scions causing them to root more readily. The theory behind the thought is correct. In fact I cannot think of a better source of nutrients

and hormones in the accessible reaches of most Camellia enthusiasts. They are already packaged in the correct dilutions!

The addition of Auxin (Indoleacetic acid, or Napthalene acetic acid) to the Gibberellic acid will definitely cause a synergistic reaction, or in other words, will cause greater growth than either one alone can give, as my results showed. The reason for this is that while Gibberellic acid acts on the cell causing cell enlargement, the Auxin acts on the cell causing cell elongation and also causes a softening of the cell wall, enabling the cell to swell up even larger. The experiment I conducted was, sorry to say, not on Camellias but on Sunflowers. The plants were grown in Hoaglund's Solution, a complete liquid nutrient medium, in 1 liter Erlymeyer flasks. Greenhouse conditions were maintained, with the nutrient solution changed daily.

Ten plants were used in each cate-

gory as follows:

1. Control plants no treatment at all.

2. Group A treated with 1ppm Naphthaleneacetic Acid applied by misting at 24 hour intervals.

3. Group B treated with 1ppm Gib-

berellic Acid applied as above.

4. Group C treated with 1ppm Gibberellic Acid plus 1ppm NAA, as ap-

plied as with group A.

In all cases the experimental plants were larger, (larger stems, taller, larger leaf area) than the control plants. Group C was the same height as the plants in Group B on the average, though Group C also included the largest plant. The leaves in Group C

were wider by approximately 20 per cent than these of either Group A or B. The plants in Group A were the thinnest (lighter stems, longer internodal distances) of the experimental groups.

The possibilities of this for "Gibbing" poses to be interesting. The addition of auxin to the Gibberellic Solution would it seems increase the size of the Gibbed bloom to an even

greater extent.

Dr. William Bennet, in the Camellia Review (vol. 38 No. 3), brought up some interesting facts on Gibbing, such as the act of Gibbing will not increase the number of petals in the bloom.

My next project will be to find out if the addition of Kinetin-Auxin Solution will not create an even larger bloom. The Kinetin should pull additional nutrients to the site of the application, while also causing rapid cell division in the bud, unlike the use of Gibberellin only.

TEABy Leonid Enari

Senior Biologist, Los Angeles Arboretum

Ed. Note: Reprinted from the December 1976 issue of LASCA Leaves, published by the Los Angeles State and County Arboretum.

The early history of the tea plant (Camellia sinensis) and of the beverage derived from it is veiled in mystery. There are many legends in China but they can not, of course, form the bases for conclusions.

One of the legends often repeated is that the first plants in China came from the eyelids of an Indian prince, Dharma by name. According to the story, Dharma, a pious Buddhist monk and missionary, left India and travelled to China to teach the doctrines of Gautama. He vowed that he would not sleep until his mission was accomplished. One day, however, after many years of teaching, meditating and praying, he was overtaken by sleep. In holy wrath against the weakness of his flesh, he cut off his

eyelids and threw them to the ground. Passing that way some time later, he noticed that the eyelids had grown into two shrubs loaded with seeds. He nibbled some of the leaves and found them to possess the power of hindering sleep. He told this to his friends. When nthe story spread, the people began to plant the seeds so they too could enjoy the miraculous properties of the leaves.

Dharma was a real person. The date of his visit to China is recorded in Chinese chronicles of the reign of Wei Wu as of A.D. 543. Some modern authors speculate that if Dharma ever told that story, he made it up to make the plant more atractive to his Chinese pupils.

It seems, however, that the habit of

drinking an infusion or a decoction of the specially prepared leaves started in China in the fourth of fifth century, A.D. It also seems that drinking of the tea was greatly promoted by Buddhist missionaries, who found in tea a means of combating intemperance. In the eighth century, A.D., tea had become a regular industry in China, for in the annals of the T'ang Dynasty we learn of its being subjected to an imperial duty.

Marco Polo, who traveled in China in the thirteenth century, makes no mention of tea, neither the plant nor the beverage, although it is well established that the plant and its properties were as fully known then as today. In passing, it may be added here that he similarly does not report having found people in any part of his

long travels drinking coffee.

Like coffee in the Near East and wine in the western world, tea is the ceremonial and social drink of the Far East. The Chinese custom of serv. ing tea to all official and private visitors is a distinct feature of Chinese social life and etiquette. The custom originated with the Sung Dynasty (960-1280) whose rulers served tea at court on all occasions.

Tea was first introduced into Europe very early in the seventeenth century when the Dutch began to import it into Europe from their tea planta-

tions in Java in 1610.

The Dutch soon were overpowered by the British East India Company, which secured practically a world monopoly of the tea trade. They and their American associates (the Astor, Low, Girard, Platt, Russell and Perkin families) made huge profit from the tea trade, often augmented by the illicit opium traffic to China. To get out of the monopolistic grip of the East India Company, every European colonial power tried time and again to plant tea on every square foot of their tropical land possessions, but without success.

The Dutch introduced tea to New

Amsterdam in 1650, the first importation of tea into North America. It may be interesting to mention here that when tea was first used in Salem. Massachusetts, it was boiled in an iron kettle, the liquid drained off and consumed as a beverage and the leaves eaten with butter and salt as food.

From 1660 to 1689, the prepared beverage was taxed in England at the rate of 8 pence per gallon. Beginning in 1689 a duty of 5 shillings per pound was levied plus 5 per cent ad valorem. The taxes were gradually increased until about 1770 when they totalled 119 per cent of the original value. It will be recalled that at that period the tax on tea figured in certain disturbances in the British colonies which reached their peak when a raiding party in Indian disguise under the direction of Samuel Adams, leader of the Sons of Liberty, boarded the British East India Company ships in Boston Harbor and dumped their cargo, tea, overboard.

The English word "tea" comes from the Chinese "te" or "theh" used in some of the Chinese dialects in place of the more universal "cha." It was originally pronounced like the Chinese tay, hence Alexander Pope in his "Rape of the Lock" (1712), rhymes

it with obev.

The tea plant is related to and belongs to the same family as the wellgarden known common camellia (Camellia japonica). Linneus in his Species Plantarum, 1753, described the tea plant under the name Thea sinensis. The modern botanists, however, consider the plant to be a member of the genus Camellia and list it as Camellia sinensis.

The plant is an evergreen tree to 45 feet in height. The leaves are ovatelanceolate, serrate, petioled and alternate. They are glabrous and glossy on the upper surface but sparsely hairy on the lower surface, particularly when young. The flowers are white, approximately 1 or 11/2 inches in diameter, short-pedicelled and axillary. They occur solitary or in 2-to 4-flowered clusters. Each flower has 5 to 7 sepals, 5 to 7 petals, numerous stamens and 1 pistil. The outer stamens and the petals are united for a short distance at the base. The fruits are 3-lobed, 3-celled, 3-seeded, approximately 3/5 or 4/5 of an inch in diameter and open by 3 valves. They take 9 to 12 months to mature.

Tea plants can be divided into two prinipal groups, which are usually referred to as Chinese and Indian or Assam varieties. The Chinese variety has smaller leaves, solitary flowers and is usually a shrub. The Indian variety has larger leaves, 2-to 4-flowered clusters and develops, if allowed to grow, into a fairly substantial tree. These two types of plants may have had separate origins. The Chinese type may have had its origin in China itself, whereas the Indian twoe probably originated from wild plants near the source of the Irrawaddy River. in Assam or northern Burma. The Chinese variety is more resistant to cold and adverse conditions but rather low yielding. It is the Indian variety from which most of the strains have been developed and grown on a large scale.

Tea grows best in the subtropics and the mountainous regions of the tropics where the temperatures are equable and rainfall moderate to high. Mean minimum temperatures should not fall below 55°F nor mean maximum temperatures go above 85°F. Rainfall below 45 inches per annum is marginal and should not fall below 2 inches per month for any prolonged period.

Commercial tea is derived from the leaves of the tea plant. Only the bud and the first two young leaves at the end of each twig or so-called flush, are really desirable, although the third and even fourth leaves are used in inferior qualities. Harvesting the terminal buds and the adjacent two leaves together is called "fine plucking" and constitutes the finest tea. In-

cluding the third leaf is "medium plucking;" inclusion of the fourth leaf is "coarse plucking."

The leaves are processed into various classes of teas from which the black and green tea are the best known. The black tea is fermented, the green tea is unfermented. The manufacture of black tea, which forms the bulk of the tea appearing on world markets, is done in factories set up on the tea plantations.

The green leaf brought in from the field is spread on tightly stretched hessian or nylon net stretched on banks of wire frames in open lofts or in rooms where ambient or warm air is blown over the leaves. The process of withering is a very important one in tea manufacturing. If well carried out, the amount of tea enzyme, which afterward causes the change in the leaf, nearly doubles in quantity during the operation. When the right degree of withering has been obtained the leaf is rolled. The object of rolling is to break down the size of the leaf and to rupture the leaf cells. The rolling machine has a similar effect to rubbing the leaf between the palms of the hand, which was the primitive method.

After rolling, the leaf is spread on travs for a period of about four hours during which time the leaf changes color to a dark copper and the typical aroma develops. The change in color is similar to that which occurs when an apple is cut and exposed to air. This is known as fermentation.

After fermentation, the leaf is dried in a machine which drives off excess moisture and crystallizes the fermented juice to produce the black tea familiar to tea drinkers all over the world. When the housewife subsequently brews a pot of tea, these crystals dissolve. It is essential that boiling water is used because these crystals will not dissolve properly in water that is not boiling.

The dried tea is graded, and packed for export in plywood chests lined

with aluminum foil. Principal grades in use at present are Broken Orange Pekoe, Orange Pekoe, Pekoe, Broken Pekoe Souchong, Pekoe Souchong, Broken Tea and Souchong. The Broken Orange Pekoe is considered the best. It is a curly fine tea with as many tips (buds) in it as possible and without flat pieces. In addition, there is a grade known as "Fannings," composed of the very small and light fragments of leaf not capable of being placed under any of the grades listed, and Dust, an extrmely fine grade derived from being passed through a fine-meshed sieve.

The various grades are usually blended in the consuming countries and a blend usually consists of grades from various tea plantations and usually from more than one country.

In addition to the regular commercial blends, some food markets feature in their gournet sections teas imported from China. Taiwan, India, Cevlon and other countries.

Tea contains from 2 to 5 per cent caffeine together with tannins and volatile oils. When tea is made with hot water, the caffeine and the oil readily dissolve out, and the resulting beverage has a stimulating effect and a characteristic taste and aroma. If the tea is steeped for a longer period, the tannins dissolve and the beverage becomes bitter.

Persons switching from coffee to tea for reasons of health may not realize that a cup of tea contains as much caffeine as the same size cup of instant coffee. There are 95 to 120 milligrams of caffeine in an 8-ounce cup of tea. When ingested day after day, large doses of caffeine, say more than 250 milligrams, can cause nervousness, irritability, lethargy, insomnia, headaches, palpitation, rapid heartbeat, nausea, vomiting and diarrhea.

The English-speaking peoples usually drink their tea with sugar, some adding milk or cream or a slice of lemon. The people of the Orient alIndia is the leading tea-producing most never use sugar in their tea. country, followed by Sri Lanka (Ceylon), China, Japan, Russia, Indonesia, Pakistan and Taiwan. Together they produce over 2,000 million pounds of tea a year.

The United Kingdom, on the other hand, is the largest consumer of tea, taking more than half of the worlds' exports. The second largest importer is the United States, followed by Australia, Iraq, Egypt, Canada, South Africa, Moroeco and the Netherlands.

Per capita consumption of tea in the United Kingdom is nearly 10 pounds per year and in the United States only 0.17. It is interesting to note here that just as England started out to be a nation of coffee drinkers, America started as a nation of tea drinkers. By the mid-twentieth century, the tea and coffee habits of the two countries were reversed. On a per capita basis, England drank 5 times as much tea as coffee, and the United States drank about 25 times as much coffee as tea.

The tea plant can be seen at the Los Angeles State and County Arboretum in 0/10 (north of the Herb Garden). At Descanso Gardens it is planted close to the Japanese Tea House.

The professor stepped to the platform and by way of breaking the ice remarked. "I've just been asked to come up here and say something fun ny."

At this pont a student heckler in the back of the hall called out:

"You'll tell us when you say it, won't you?"

"I'll tell you," said the professor, "The others will know."

He: "Will you marry me?"

She: "No, but I'll forever admire your good taste."

LINNAEUS B. (for BERLESE) KAMEL GOES TO THE SHOW

By JAMES H. McCOY Fayetteville, N. C.

It's the morning of the show. Mrs. Kamel has just finished preparing breakfast and has it served—eggs and bacon. She goes to the back door and calls Linnaeus, who she knows is in the greenhouse.

"Breakfast is ready. Come and get

it.'

Linnaeus sticks has head out the greenhouse door. "I don't want any. Just save me a cup of coffee."

"Linnie, you've got to eat, we've

got a long drive ahead of us."

"I'll be up in a minute. Go ahead

and eat."

Mrs. Kamel sits down and begins eating. Before she finishes. Linnaeus comes in. "Hurry up, we've got to get loaded and hit the road."

"Look, sit down and eat your breakfast. Do you want to get there before

they open the doors!"

He sits down, pours a cup of coffee, takes two swallows and a bite of toast and jumps up. "Let's go. You can clean this up when we get back."

"Go put the blooms in the car. I'll

be out in a minute."

He goes out. In a couple of minutes he's back.

"Darling, do you have a couple pillows I can use—three or four?"

"What do you want pillows for?"

"To pack around my boxes to keep them from bouncing around."

"But you don't need pillows for that! You need a couple of bricks."

"OK, do you have any bricks?"

"No. I don't"

He goes out again. In two minutes he's back.

"Aren't you ready yet? I want you to watch my flowers while I go get the car."

"Watch your flowers! Where are

they?"

"They're out on the edge of the driveway."

"Why do you need to watch them?"
"Someone might steal them. A dog
might rip open the boxes. You never
can tell what might happen to them."

"OK, let me get my coat on."

She puts her coat on and they go out. She goes to the front and he toward the garage. In a minute or two, he drives up. He stops, gets out and opens the trunk.

"Hand me that middle size box

first."

She picks it up by the ropes that are encircling it.

"Hey, be careful with that box!
You're tilting it!"

"I'm not tilting it."

"You are. I can see the water running out one end."

"Here, you do it."

He proceeds to stash his boxes in the trunk, wedging them in with bricks and an armful of burlap bags. She starts to get in the car.

"Hey, don't sit up there! I've got my 'Diddy's Pink Organdie' up there.

You sit in the back."

"Linnie! I will not sit in the back."

"Well, how about holding it in your lap."

"No thank you. Put it in the back." "Look, you drive and I'll hold it."

She gets in the driver's side and he the passenger side. He carefully balances in his lap a tupperware cake saver with a flower in it. She starts the car and they get going.

"Hey, not so fast!"

"I'm only going 30 miles an hour."
"Don't run over those manhole covers, go around them. You don't have to turn corners on two wheels, you know, I'll bet my flowers are upside down already."

"Linnie, if you don't hush I'll go to the show with Clyde and you can

chauffer your own flowers."

After about a hour and a half of driving, during which Linnaeus fusses about Mrs. Kamel's driving, the rough roads, the gas station attendant who put "too much air in the tires" and a few more natural and human failures, they pull up in front of the building where the show is to be held. Mrs. Kamel slumps in her seat and breathes a deep sigh of relief. Linnaeus jumps out and opens the trunk. A couple of boy scouts rush up.

"Can we help you bring in your

flowers?"

"No thanks. I can manage. I just have a few boxes."

The show chairman walks up.

"Hello, Lin! What'cha got there? You going to take the show again?"

"No, I don't have anything worth bringing. Just a few cats and dogs. Thought I'd bring 'em in case you needed flowers."

Mrs. Kamel looks in the mirror, runs a comb through her hair, and murmurs under her breath, "I can't believe it. I can't believe it! Maybe God'll forgive him."

THE SOUTHERN BEECH

Ed. Note: This Editorial appeared in the June, 1976 issue of "The Garden," the Journal of the Royal Horticultural Society, London. The idea of a rapid growing, deciduous, hardwood tree boggles my mind and I cannot resist the opportunity to pass the news along to you readers!

When (and I say when rather than if) Nothofagus, the beech of the southern hemisphere, becomes a familiar and important tree in Britain, it will largely be due to the efforts of one exceptional and visionary tree-lover, the Earl of Bradford.

I have been visiting his experimental plantations near Tavistock and in Shropshire, where a number of Nothofagus species (but principally two from South America: N. obliqua and N. procera) are matched against the fastest-growing trees in current use: Douglas fir, thuya, redwood, western hemlock. In most cases the Nothofagus is growing at twice (literally twice) the speed of its nearest rivals. In a plot of seven-year-old trees the thuya might be twenty feet tall; the Nothofagus will measure forty.

Seed of these trees, which grow in "limited zones in southern Andes and round Valdiva in Chile, is not easy to acquire. In a dense forest, with an undergrowth of twelve-foot bamboo and berberis, collecting the tiny shortlived seed of the tall beeches is almost impossible. One way is to make a clearing and fell a big tree heavy with seed, but the organization to mo-

bilize resources in remote roadless country doesn't exist. Or didn't until Lord Bradford made it his business. As a result of his indefatigable correspondence there now seems to be a good chance of the first substantial shipment in the near future.

At Weston in Shropshire Lord Bradford keeps what as far as I know is a uniquue 'forest garden;' some thirty acres divided into quarter-acre plots in which he plants combinations—sometimes seemingly rather improbable combinations—of trees to see how they get on together. His unwearying observation of the results at close quarters is constantly producing new information. Different rooting habits, different periods of leafing, different rates of spreading to form a canopy and exclude light from the ground are the sort of factors which influence growth. There are successes and failures, but the greatest success by far are the Noothofagus, which outstrip any other tree or combination of trees.

To the ecologist, to the conservationist, to the hiker or lover of landscape, the potential of the southern beech is wonderful news. It means that if all goes well the next generation of forest planting in this country (on most soils; not all) will be deciduous, and indeed indistinguishable in overall effect from our native hardwoods. A forest of southern beeches will be as beautiful and natural-looking in Sussex as in Patagonia.

For gardeners their rate of growth

and their light and graceful canopies will make them indispensable. Even for street planting they will be ideal: they move well at big sizes and their small leaves are easily cleared and composted.

Nothojagus can grow twenty feet in four years from seed. When it comes we shall not have to wait long

to see results.

HOW TO GROW "LARGE" SHOW QUALITY CAMELLIA BLOOMS

By JOHN MENDOZA III

Ed. Note: Here is another excerpt from the book on "Growing Camellias in Santa Clara County." The book can be purchased for \$2.50 from the Camellia Society of Santa Clara County.

For the past four or five years I have noticed many spectators attending our Annual Camellia Show with a look of total amazement. During their tour of the Show they are constantly mumbling to themselves, "just how do these growers produce such beautiful camellia blooms?" Once they have seen these flowers they immediately go home and attempt to find the "secrets." After one or two years of complete failure they become totally frustrated and never want to see a camellia again! Many contend that the growers of the Camellia Society have some kind of secret fertilizer formuula which produces these masterpieces of color in their vard and annual flower show. Well if you are one of those who believe this, here's your chance to find out just what one growers' "secret" is.

I have found that in order to grow high quality show flowers one must first realize the importance of a carefully designed fertilizing program along with a good pruning and spraying habit. No single cultural program will do the job. In recent years, research has proven that a light continuous fertilizing schedule is far superior to a few heavy feedings. It was proven, that by fertilizing with a high analysis fertilizer once or twice during a growing season most of the nutrients are never taken up by the plant because they are leached past the root zone during successive waterings between long feedings. It takes time for the plant to extract these applied nurients from the soil, and if the feeding interval is spaced too far apart most of the nutrients will be washed out during watering without being replaced until the next feeding. When this occurs a slight deficiency in nutrients develop but never enough to give visible signs. This then causes a gradual decrease in plant vigor and growth. To avoid this problem one can design a continuous low analysis feeding program. By feeding more frequently with low analysis fertilizers the plant is supplied with its proper nutritional requirements constantly throughout its growth and development without any toxic effects. Fertilizing is usually started immediately after the blooming season in order to stimulate rapidly the new growth from which next years flower buds will develop. Therefore, I usually begin by applying a liquid fish fertilizer (fish emulsion) which has a low chemical analysis of 5-1-1 approximately on April 15. This fertilizer will give a good source of nutrients for vegetative growth because it contains 5 per cent nitrogen. Then about May 15th I follow-up with a liquid 2.10.10 fertilizer. By doing this we are adding another 2 percent of nitrogen closely behind the last feeding, thus insuring that nitrogen is not limiting. By allowing the plants to have a nutrient supply over a longer period of time, their uptake by the plant is more efficient. This fertilizer also contains 10 per cent phosphorus and potassium which are very important and critical in flower bud initiation and development starting at this time. The summer time is not only a time of heavy growth and bud development, but also one of heavy water usage. Since our water supply in Santa Clara is slightly on the alkaline side, and has a tendency to shift the PH higher an acidifier should be added (such as aluminum sulfate) around July 15th. This avoids the problem of nutrient unavailablility due to a high PH. Such elements as iron become unavailable to camellias when the PH becomes high (alkaline) above 7.0 on the PH scale. Then, approximately one month later (Septemher 15th) you want to concentrate on the development of the initiated flower bud and not on the vegetative growth. Therefore, around this time I feed with a granulated 0-10-10 fertilizer and repeat on October 15th and November 15th. Since this contains no nitrogen, the effect is to shift the plants metabolism from producing vegetative growth to bud development. Bud development is greatly enhanced by the 10 per cent phosphorus and potassium which make up this unique fertilizer.

I have also found that adding cottonseed meal every 90 days not only insures a good constant nutrient supply, but also a good mulch and soil structure enhancer. It can be added starting April 15th right along with the liquid fish emulsion application without any fear of burning. Since cottonseed meal is an organic material, it only releases its nutrients upon decomposing which takes a while to accomplish. In doing so, you have a slow release fertilizer which helps carry the plant nutritionally between feedings. These fertilizers were carefully selected and the schedule designed so as to give maximum flower development and overall good plant health. They were also selected because they have a low tendency to build up soluable salts within the soil which usuaully happens with frequent feeding schedules. I have found that this schedule works best in soils which are slightly on the heavy side, but having excellent drainage. Plants which I subjected this program to are disbudded when buds are first distinguishable and are grown under a lath structure which emits 50 per cent light. It is important to remember that you never fertilize when the soil is dry. First moisten the soil then apply the fertilizer and thoroughly water it.

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DO JUDGES AND THE PUBLIC AGREE? By HAROLD E. DRYDEN

The annual camellia show at the Huntington Botanical Gardens, sponsored by the Southern California Camellia Society is oriented to the public. It is non-competitive except for the few modest awards for Best and Runner-up in 6 Divisions. Flower arrangements are interspersed with the flowers on the show tables. It is not an exhibitor's show in the sense of the usual camellia show.

One of the gimmicks used to add to public interest is to ask the visitors to vote for their favorite flower on he head table. This year there were 31 flowers on the head table, the 12 that the judges had selected as Best and Runner-up in the six Divisions and 19 others that had been chosen for the final judging. People were given blank ballots as they entered and had only to write in the number of the flower they liked best. 1970 ballots were cast.

Note the number of formals—5 of the 12, including the old timer 'Mrs. Tingley' originated in 1949.

There were 9 reticulate hybrids on the table: 4 of them were in the top 12 with 'Cornelian' and 'Valley Knudsen' being 1-2. Actually, if you disregard the variegation. 'Valentine Dav' finished first with 309 votes. Such reticulate domination is consistent with judges' choices for "Best Flower in the Show" back in the days when this was one of the show awards.

We sometimes wonder how the judges' decisions compare with what the public thinks. It is impossible to get a definite answer in a poll such as the vote at the Huntington Gardens because the public is selecting a Best Flower of the Show whereas the judges have selected Best and Runner-up in 6 Divisions. The judges' selection of the Best non-retic hybrid, for example, could be well down the list in the public's choices. With these limitations, we'll see what we can make out of the Huntington vote.

The significant outcome of the vote in the retic hybrids, in my opinion, is the public preference for the smaller flowers (Large to Very Large) over the larger ones (Very Large). All 4 retics listed among the top 12 are Large and the highest vote getter in the Very Large group, 'Dr. Clifford Parks' (34 votes), trailed number 4 in the Large group, 'Valentine Day,' (167 votes) by a wide margin. 'Pharaoh,' the darling of many of our shows received only 11 public votes.

In the Very Large retic group the judges chose 'Dolores Hope' with 'Dr. Clifford Parks' runner-up. The public chose 'Dr. Clifford Parks' as number 1 in this group with 'Mouchang' (29 votes) and 'William Hertrich (23 votes) following. The judges winner 'Dolores Hope' received only 4 public votes.

The judges chose 'Cornelian' as Best in the Large group with 'Valley Knudsen' runner-up. The public vote supported this choice.

The judges and public differed sharply in the choices of Large japonicas. The judges selected 'Miss Charleston Var.' as Best and 'Lenore Novick' as Runner-up. The high public votes in this group were for 'Clark Hubbs Var.' (198 votes) and 'Ivory

Tower' (106 votes). 'Lenore Novick' was next to last with 13 votes. It is interesting to note that 198 people liked 'Clark Hubbs Var.' compared with only 10 votes for an attractive solid color 'Clark Hubbs.'

The judges took another tumble in the Medium japonica group. They chose the ever popular show favorite 'Midnight' at Best, with 'Pink Pagoda' Runner-up. The public chose 'Pink Pagoda' first (115 votes) and 'Mrs. Tingley' second (74 votes). The Mediumu japonicas received a total of 241 votes and these two formals received 79 per cent of these votes. The judges' favorite 'Midnight' received 26 public votes.

The public vote in the japonica boutonniere group (Small and Miniature) confirmed the view of most camellia judges that 'Kitty' ranks high among all camellias. They gave it 150 votes, behind only 'Cornelian,' 'Valley Knudsen' 'Clark Hubbs Var.' and 'Valentine Day.' Number 2 in the public vote was 'Little Red Ridinghood' with 37 votes. This agreed with the judges' decision.

The vote in the group of Hybrids with Other Than Reticulata Parentage also found the judges and the public together with 'Angel Wings' first (74 votes) and 'Elsie Jury' second

(37 votes).

OF HORSERADISH AND HUMILITY By PHILLIP J. WINGATE

Ed. Note: This article is a reprint from the DuPont trade magazine, CONTEXT, volume 5, no. 2.

The civilized part of the human race in recent years has become frightened by chemicals and at times seems to wish that it could do away with them entirely. This is unfortunate for two reasons. First, it is not necessary, and, second, it is impossible.

The world is made up of chemicals, and the air above us as well as the oceans and continents around us are seething masses of chemical reactions. Happily, this has always been true so there is nothing to be alarmed about. The human race grew tall and strong or soft or round, according to your preference, while exposed for countless centuries to all sorts of chemicals. In proper doses they do no harm and actually are necessary for a healthy human race.

Most people learn early in lifefrom exposure to such things as horseradish. Tabasco, and even table salt that while a little bit of something can be very good, a whole lot can be a disaster. Not everyone learns this, too be sure, and some people have trouble all their lives with such things as alcohol, chocolate sundaes, and garlic. Nevertheless, the idea is sound, and most people agree.

However, it is astonishing how many people have trouble if they start at the end and work back to the beginning. They tend to think that if a lot of something is very bad, then even the tiniest amount must surely be a little bad and will destroy the huuman race in a few years. Give us zero exposure to chemicals, they say, and the cyclamates were banned entirely because huge doses caused cancer in some experimental animals.

They persistently ignore a multitude of well-known facts. The salts of copper, tin, cobalt, and even iron, in large quantities, are poisons, but every one of them, in small quantities, is necessary for healthy human life. The freshest fruits and vegetables, grown using only natural fertilizers, are filled with an astonishing array of chemicals such as hydrocarbons, ketones, esters, lactones, acids, alcohols, and mercaptans. But despite all this, or more accurately because of it, they smell delightful taste delicious and are exceedingly nutritious.

Many people like a slice of onion with their hamburger, but one reason why an onion tastes like an onion is that it contains some propyl mercaptan, and an oyster on the half shell has just enough methyl mercaptan in it to make it smell like an oyster. Mercaptans, in their proper place and concentration, are delightful. However, that foul odor often found near oil refineries is also largely due to a variety of mercaptans, and the effective ingredient in the spray released by an angry skunk is mostly butyl mercaptan.

What would be the likely reaction of the public if a manufacturer of breakfast foods proposed to improve the taste of his products by adding small amounts of the following chemicals to them: acetone, acetaldehyde, methyl butyrate, ethyl caproate, hexyl acetate, methanol, acrolein and crotonaldehyde?

No doubt the air would be full of flying injunctions and sticky lawsuits because every one of these chemicals is a poison.

Nevertheless, all eight of the chemicals listed are found, along with many others, in ripe strawberries. Skeptics may question these facts but they are well documented in *Helvetica Chimica Acta* (Vol. 47, page 1215, 1964), one of the soundest and most respected scientific journals in the world.

Not only is a ripe strawberry loaded with chemicals, but it acts as a chemical reactor right while it sits on the breakfast table waiting to be eaten. The acetaldehyde is being oxidized to acetic acid, the crotonaldehyde to crotonic acid, and the methanol to formaldehyde. In fact a single strawberry may have going on in it reactions almost as complex and diverse as those going on in the atmosphere above all of Arizona. Here ozone is being formed and destroyed, nitrogen oxides are attacking the esters and ketones given off by billions of or-

ange blossoms and trillions of cactus flowers, carbon monoxide from thousands of cars is being oxidized to carbon dioxide, and terpenes drifting in from the redwood forests of California are reacting with the ozone and oxides of sulfur blowing up from Mexico.

Helvetica Chimica Acta, in Volume 67, also gives an analysis of ripe raspberries, but if Volume 47 has ruined your appetite for strawberries perhaps you should not look at Volume 67. Raspberries also are good with cornflakes.

Scientists, aware of these facts and thousands of others showing that chemicals are all around us and cannot be removed, are amazed that nonscientists pay little or no attention o it all. They think the nonscienists should pour a generous helping of the sauce of humility on the recommendations which they offer so freely to the rest of the world.

A reasonable suggestion. But the sauce of humuility is just as badly needed by the scientists who almost never learn, soon enough, all the hazards associated with the products they make and handle. Things which chemists thought to be perfectly harmless a few years ago, such as vinyl chloride and beta propiolactone, have been found to be carcinogenic. While it is neither necessary nor possible to have zero exposure to chemicals, it is wise to handle them with a degree of caution proportionate to our ignorance—which is often great.

So give us a little horseradish, please, to pep things up, but don't overdo it because there is quite a bit of allyl isoothiocyanate in horseradish. We do not know all the hazards which may be associated with allyl isothiocyannate, but we do know that if you put a spoonful of pure, freshly ground horseradish in your mouth all at once, you probably will be cautious with allyl isothiocyanate the rest of your life.

FLOWER ARRANGEMENT SHOW WILL COMPLEMENT THE DESCANSO CAMELLIA SHOW

By RANDY M. McDONALD

The Sixth Annual Mary Wills Flower Show sponsored by The Descanso Gardens Giuld and the Southern California Camellia Council is being held Friday, March 12th and Saturday, March 13th in the Hospitality House in the gardens.

Opening to the public at 1:30 p.m. on Saturday, judging will have taken place by the time the public is admitted. Ribbons indicating First, Second, Third and Honorable Mention will have been placed by the winning arrangements.

The flower show is being held in conjunction with the annual Camellia Festival exhibiting in the Gardens simultaneously.

Categories are: Camellia Arrangements—A: large. B. small. Open to any floral varieties are 1. Miniature arrangements. 2. Elementary schools arrangements. 3. Intermediate school

arrangements. 4. High school arrangements. 5. Ikibana. 6. Victorian arrangements. 7. potted bulb arrangements. 8. Bonsai.

Among the Judges are Muriel Merrell of Los Angeles judging the categories of Ikibana and Bonsai. Clare Rowland of Glendale judging Miniature and Victorian and Helen Howell of Glendale judging the Camellia classifications.

Mary Wills, for whom the show is named has been a Descanso Gardens Guild member for 17 years and was its first chief Flower Arranger, a position she held for 10 years. She is a member of the Executive Committee of the Board of Trustees and a loyal and enthusiastic worker for the Guild.

Assisting Randy McDonald, coordinator of the show are Guild members Mrs. Edward Corn, Mrs. Claude Gillam, Mrs. Gerald Wells and Mrs. Richard Strauss.

PETAL BLIGHT: WE NEED A CURE

By JIM McCLUNG

Camellia Petal Blight seems to be spreading to new areas even though every precaution is being taken to restrict it. The situation has arrived at a "kill or cure" stage. The present chemical controls are only adequate if everyone in the area uses them. Picking up diseased flowers to break the life cycle of the fungus poses the same problem. How about the gardener who has only a few plants as part of his general landscape plan? He probably knows nothing of the disease and blames the brown flowers on a multitude of wrong causes. Since the spores can be spread at least a mile by the wind that one gardener can infect a great many other gar-

dens. We are lucky in that only one neighbor grows camellias and he is a member of our society.

The present method of breaking the life cycle would be good if everyone practiced it. If a plant could be treated at the nursery and have the disease cured completely before it entered the garden then we would be rid of petal blight. Mechanical methods do not seem to be the answer. Black plastic mulch, a two inch layer of path-size redwood bark or pea gravel, and other non-decaying mulches will prevent the second stage in the garden in which one of these methods is used. One must just keep the fallen flower from touching the

soil. But that gardener in paragraph one doesn't know about these things. Neither does he know about chemical

sprays.

Besides, the large chemical companies say that it is not feasible economically to create a program to investigate permanent controls of petal blight. (Don't they know that a chemical that cures one disease usually cures a whole batch?) So what is to be done?

What we need is a friendly neighborhood microbiologist with a little time on his (her) hands and the will to spend some time in finding a cure. It would seem that the most positive cure would be to find another fungus, one that is parasitic on Sclerootinio camelliae during its dormant stage. This fungus could be spread around the blighted areas to attack Schlerotinia before it attacks the camellia

blooms. This was done with the milky disease spores to control the Japanese beetles that were destroying America's elm trees. It has been discovered that the disease attacks a multitude of larvae that damage plants. At least we know that parasites have parasites and diseases that will keep them under control. But what fungus it is? Look in Sclerotinia camelliae's homeland and see what it is attacked by.

Perhaps we could get some of the staff at Cal Poly to donate some time and wisdom in finding the proper parasite that will destroy petal blight fungus without hurting anything beneficial to the garden. Maybe somebody knows somebody who has the knowhow to accomplish this complicated project. It would be a tremendous blessing to the camellia world and sounds like the most logical approach to a serious problem.

WHY CAMELLIAS HAVE NO FRAGRANCE By DR. HERBERT SHIRLEY

Many eons ago, when Jupiter ruled the world, Venus the goddess of love showed the people of her court that she could make decisions

It seems that Mars, the god of war was in love with Venus-Venus on the other hand had her cap set for the big wheel—Jupiter—the ruler of the universe, indeed the biggest wheel of them all.

Venus got her man and married Jupiter. From that union, Cupid, god

of love was born.

Vulcan, god of fire—the Walter Winchell of his day, was out gathering gossip one time, and came upon Venus and Mars together. This was too good to keep, so he went to Cupid and told him that he had found his mother, Venus and Mars together.

Cupid was very put out over this news, so he upbraided his mother for her indiscretion. This made Venus very angry, having her son telling her what she couldn't do, so she ordered him thrashed with Rose Briars.

Now, Cupid didn't want his tender skin cut with rose thorns, so he persuaded Zephyr, the goddess of wind to fly to a neighboring country and bring back some thornless rose branches, which were camellia branches, with which he was to be punished.

All the goddesses of the court were so pleased with the camellia blossoms, that they wore them in their hair and in their bodices.

Naturally Cupid was the fair haired boy around the court, and his punishment was just a mockery.

When Venus heard of this, she was enraged so much, that she took away the frangrance from the camellia, and banished it to far away Japan and China, where it remained in obscurity for many centuries, until Father Camel found them and brought them back, so that the rest of the world could enjoy and see them again.

SEARCH FOR THE YELLOW CAMELLIA

Ed. Note: This article was written by the late Ralph Peer and appeared in the Rhododendron and Camellia Yearbook for 1954, published by the Royal Horticultural Society, London. The fact that present day hybridizers are avidly seeking a yellow camellia prompts us to reprint this article at this time.

Whether or not there are Camellia plants which bear yellow blossoms has been a moot point during the last two hundred years. While visiting Kyoto, the ancient capital of Japan, during the year 1949, I came across an ancient Japanese book filled with hand-painted illustrations of Camellia blossoms. Several of them were orange coloured and others were yellow. The botanist who owns this work refused to part with it, but in answer to my questions expressed the opinion that in "ancient times" yellow flowered and orange flowered Camellias were growing in Japan.

More than one hundred years ago, Robert Fortune was sent from England to obtain tea plants, and also examples of the "yellow Camellia." Presumably, the pioneers who brought the original Camellia plants to England had heard vague rumors about yellow species, and this created a legend which has not been verified up to the present day.

Fortune did find in Shanghai a Camellia having blossoms which certainly contained more vellow than any other color. He succeeded in bringing this plant to London, a prodigious feat when one remembers that he sailed around the Cape of Good Hope, thus subjecting his plants to all kinds of weather and the undoubtedly bad effects of transportation, first from the northern hemisphere to the southern hemisphere, and then back again. When this Camellia flowered in London it was immediately placed as a Sasanqua and named C. Sasanqua 'anemonaeflora.' The blossom was reproduced in Curtis's Botanical Magazine (Vol LXXXV, t. 5152, Dec. 1, 1859) and appears to have been propagated extensively both in England and on the Continent. Verschaffelt

added it to his collection under the name of *C. jaune* (Nouvelle Iconographie des Camellias, Book X, Plate II, p. 137, 1853).

An inspection of the two existing color plates—the Botanical Magazine and the Verscaffelt Iconography—indicates that actually this is not a true yellow Camellia because the petals are pure white. The very large center consisting of yellow stamens and yellow petaloids certainly entitles this blossom to the appellationn "yellow." Botanically, however, the flower is "white" and we must conclude that Mr. Fortune failed in his search.

In 1948 I undertook a trip around the world by plane, stopping first in New York and then London. While in England, Mr. William Campbell, Curator of the Royal Botanical Gardens, Kew, called my attention to Fortune's yellow Camellia, and recited its curious history. He was certain that the original plant had been presented to the Royal Botanic Gardens, where it had grown and blossomed for many years. About 1870, however, the original plant died, and so far as Mr. Campbell could determine there are no examples of this variety anywhere in the British Isles. He thought it a pity that this novelty should disappear, and asked me to make inquiries in the different countries which I intended to visit. I did not forget his request, and made extensive investigations in Portugal, South Africa, Australia, New Zealand, Hong Kong, Shanghai and Japan. I had with me a reproduction of the plate which originally appeared in Curtis's Magazine. Nobody to whom I spoke had ever seen this flower, and no one knew where I could find it. Subsequently, I made search for this item in Mexico, and corresponded

with friends in Brazil, Argentina, Chile and India, hoping to obtain a clue.

During the winter of 1951-1952 I travelled by automobile through various European countries, and again took up the search. The old files of the famous Camellia nursery of Guichard Soeurs at Nantes, France, contained no reference to this variety, and when I continued on through northern Spain I received no encouragement. After reaching La Coruna in the extreme north-western corner of Spain we turned southward and came upon many old Camellia trees. Crossing the border into northern Portugal we stopped at Porto for two days in order to visit the nursery of Alfredo Moreira da Silva, famous locally for its wonderful Roses and its collection of Camellias. Actually, we had rather indefinite information. which led me to believe that we might find plannts of C. reticulata flore pleno—the double form of reticulata which, likewise, had been brought to England by Robert Fortune. We were successful in finding the double reticuulata, and while preparing to obtain a color pphotograph of a specimen then in blossom, Mrs. Peer noted a curious looking Camellia with very thick, small leaves. When she asked the propietor. Shr. Joachim Moreira da Silva, for the name of this variety he said that it was an unimportant item which he kept in stock only because of its novelty value. He explained that the flowers were small but contained a great deal of yellow. Mrs. Peer at once remembered our long search for a vellow-flowered Camellia, and suggested to me that this thickleaved specimen might actually be Fortune's Sasanqua. A small lead tag which I found attached to this plant bore the legend "Jaune" and I realized that we had finally brought our long search to a suuccessful conclusion.

Due to our limited time, and the

fact that I at once ordered plants shipped to Los Angeles, I did not photograph this plant, but subsequently we saw the mother tree at the original nursery situated some distance from Porto. The leaves are thick and fleshy, quite different from any other Camellia with which I am familiar. The tree was only about 4 ft. tall, although it must have been 100 years old. Subsequently, I learned from Shr. Moreira that he could reproduce this variety only by grafting, and that even then he had only a small percentage of successful takes. Up to the present time I have not succeeded in transferring this variety to the U.S.A., and it is quite obvvious that it is too delicate for general commercial distribution.

Two plants were sent to the Royal Botanic Gardens, Kew but they lasted no longer than plants sent at the same time to California. In due course, however, I presume that it will be possible to re-establish this variety in England, and to transfer it to the U.S.A. This variety is of great interest to botanists and of importance historically. It is not, however, a true yellow Camellia.

In 1948, Mr. Sam Hiort, owner of the Thomasville Nursery. Thomasville. Georgia, in the southern part of the United States, came across a seedling which he considered an extraordinary novelty. Under the name, C. japonica 'Frank Gibson,' this variety has now been distributed commercially throughout the U.S.A. The flowers are of medium size—usually 4 in. in diameter—and are similar in form to the Fortune vellow Camellia. The blossom is formed like an anemone with white outer-guard petals and a large cushion of very yellow stamens, however, there are frequently many petaloids. In some examples the petaloids are all of a golden color. More frequently, however, they are a mixture of white and golden yellow.

In any event the effect is quite striking and the blossoms are very beautiful. This variety is not difficult to reproduce and seems to grow well in any climate. It is in my opinion, the best "vellow Camellia" yet discovered.

In 1950, Dr. Walter Lammerts, famous California Rose specialist and the man principally responsible for the importation of the Kunming reticulatas, brought to my attention a little-known book, Flore Generale de L'-*Indo-Chine*, containing descriptions of *Thea* plants growing in Tonkin. Several species were described which had vellow flowers. Subsequently, I obtained a supplement to this book which gave the names of many other interesting Thea plants, some with yellow flowers, others coral colored, and a species which bears purple blossoms.

Thea, of course, is a very close relative of the Camellia, and it is reasonable to suppose that hybrids could be produced.

The true yellow Camellia presumably exists in the form of Tonkinese Thea plants, but I regret to report that sinnce uncovering these facts it has not been possible to reach the interior of Tonkin in order to bring out specimens. The area where Thea grows wild is occupied by Communist forces and there has been no possibility to organize an expedition to bring out "vellow Camellias" for distribution to the Western world.

SOME NOTES ON CAMELLIA HOW COME

By Burnell Yarick

We accept most of the ways of doing things from most of the growers who do them successfully; like when to water and what to add. Our plants have a language but can we read their language of "I'm hungry; I'm thirsty; or too much of this and too little of that?" Suppose you want to find out some of these things for yourself. Try this.

First, decide what you want to learn. Suggestions: To find the rate of use of water, effects of over- or under-irrigation, when to water, effects of climatic variations, effects of various fertilizers and the symptoms of either excesses or deficiencies of any of the components, soil pH, shad-

Any study of value must be based upon the use of a replicated check of plants which were grown identically except for the single variable under consideration. They should be of the same variety and in good health; rooted cuttings; not pot-bound nor rooted through; and of the same pot size and soil mix. Identify each pot with a nickname or number. Slip the pots off to inspect for root distribution and health. Plants should be uniformly exposed to filtered light and with the pots protected from sunburn.

If studying irrigation, each plant should be on a short platform, about 6" high, so the leachate may be collected and measured both for amount and salinity. This is easily done with a pigtail. If the pot has holes on the side, the platform should be slightly tilted with the pigtail hanging over the lower edge. Collect the leachate in covered containers such as a strawhole. All plants should be fertilized such that the irrigation variations are not being destroyed by nutritional deficiencies.

start the watering studies, drench at least four pots and weigh very accurately every few hours until the pigtails stop dripping. Then keep on weighing at the same time each day until wilting is evident, not only in the afternoon, but in the early morning. Then if you have enough nerve, let it go one more day. Reason: the shape of the drying curve is very important in this area of dryness.

Plot the weight loss for each plant on graph paper. It should be steep during the dripping, then with a steady loss for many days, then flatten out during wilting. The curves of all (four) plants should be very similar. Proceed with other experiments. Theoretically, plants should do equally well anywhere up to wilting. If the accuracy of this point is to be checked further, procure any of the recent moisture-checking devices and observe it very accurately through one complete moisture cycle. Only then can one depend upon instrumentation with confidence.

To compare the moisture cycle with variations in climate, it will be necessary to compare several cycles with the evaporation from a covered dish of water, covered to protect it from birds and bees. Measure the evaporation either by weight or volume of water needed for replacement each day.

Of second interest to irrigation are the investigations in fertilizers. Al-

though perhaps more difficult and requiring more time, nitrogen deficiency is easily demonstrated and in only a few months. My trials were unable to detect needs for P and K additions. Run trials with plants getting all fertilizing materials with but a single exception at a time: organic matter, N, K, K, Cu, Mn, Zn, B, Ca, Mg.

Other experiments can include shading, pruning, bud thinning, a

host of others.

Once the weight of a plant is known for fully wet and completely dry, it is possible to restrict its growth to particular areas of the drying curve. For instance, never fill the soil reservoir more than half full. Or, never let it dry out more than half dry, and compare these to plants where the full drying cycle has been permitted. Then, by collecting the leachate, what has been the effect of the various watering systems on the salinity and pH? Much can be done to give information in this questionable area.

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SHOW RESULTS SAN DIEGO CAMELLIA SOCIETY THIRTIETH ANNUAL CAMELLIA SHOW

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Conference Hall — Balboa Park

Best Large Japonica

'Tomorrow Park Hill'-Rudy Moore

Runner-up Large Japonica

'Carter's Sunburst'-Mrs. and Mrs. Harold Rowe

Best Medium Japonica

'Sawada's Dream'—Lee Chow

Runner-up Medium Japonica

'Margaret Davis'-Mr. and Mrs. B. H. Pace

Best Small Japonica

'Maroon & Gold"—Mrs. and Mrs. Jim Andrews

Runner-up Small Japonica

'Hishi Karaito'—Mrs. and Mrs. Harold Rowe

Best Miniature Japonica

'Confetti Blush'—Mr. and Mrs. Grady Perigan

Runner-up Miniature Japonica

'Pearl's Pet'-Mr. and Mrs. S. W. Miller

Best Reticulata

'K. O. Hester'-Mr. and Mrs. Ab Summerson

Runner-up Reticulata

'Miss Tulare'-Mr. and Mrs. R. P. Treischel

Best Hybrid

'Elsie Jury'—Mr. and Mrs. Sergio Bracci

Runner-up Hybrid

'Anticipation'-Bob Jaacks

Best 3 Large Japonicas

'Sunset Glory'—Fred Hamilton

Runner-up 3 Large Japonicas

'Grand Prix'—Carvll Pitkin

Best 3 Medium Japonicas

'Flame Varigated'—Mr. and Mrs. R. P. Treischel

Runner-up 3 Medium Japonicas

'Firecone Varigated'-Mr. and Mrs. Grady Perigan

Best 5 Japonicas

'Tiffany'-Mr. and Mrs. Ab Summerson

Runner-up 5 Japonicas

'Maroon and Gold'-Mr. and Mrs. W. F. Harmsen

Best 3 Reticulatas

'Cornelian'-Harry Putnam

Runner-up 3 Reticulatas

'Buddha'—Bill Donnan

Best 5 Reticulatas

'Buddha'—Bill Donnan

Runner-up 5 Reticulatas
'Francie L'—Mr. and Mrs. Ab Summerson
Best 3 Hybrids
'Angel Wings'—Mr. and Mrs. Sergio Bracci
Runner-up 3 Hybrids
'Waltz Time Varigated'—Sally Ptak
Best Species
'Sukiyo Wabkuke'—Les Baskerville
Best Treated Japonica
'Premier Varigated'—Mr. and Mrs. Sergio Bracci
Best Treated Reticulata
'Pharoah'—Caryll Pitkin
Best Treated Hybrid
'Elsie Jury'—Wilbur Foss
Best Seedling
'Singapore Sal'—Harry Putnam
Best New Sport
'Han Ling White'—Lee Chow
Best Grafted Plants
One and Two Yearolds—Les Baskerville
Best Collector's Tray Nine Planma, Mr. and Mrs. Sancia Pracci
Nine Blooms—Mr. and Mrs. Sergio Bracci
Runner-up Best Collector's Tray
Nine Blooms—Mr. and Mrs. W. F. Goertz
Best Novice Bloom
'Angel Wings'—John Mehert
Runner-up Novice Bloom
'Francie L'Sally Ptak

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'Angel Wings'	Mr. and Mrs. B. M. Pace
'Dixie Knight'	Mr. and Mrs. Harry Humphrey
'Cornelian' (Tray of 5)	Harry Putnam
'Kohinor' (Tray of 3)	Fritz Kahen
'Tomorrow Park Hill' (Tray of 3)	Rudy Moore
'Royalty'	Mr. and Mrs. W. F. Goertz
'Fairy Garden'	Ernest Pieri
'Tomorrow Park Hill' (Tray of 5)	Mr. and Mrs. Sergio Bracci
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'Pink Frost'	Paul McClelland
'Dixie Knight'	

Number of Blooms 1573 Number of Exhibitors 73

Attendance 3500



THE THREE MISS TULARES

In 1968 Morie W. Abramson of Tulare, California obtained a promising seedling from his C. reticulata 'Crimson Robe.' When the seedling bloomed it was a large to very large, rose from double to full peony form. The color of the flower was bright red. The question was—WHAT TO NAME THIS NEW CULTIVAR? It so happened that the Abramsons teen-age daughter had entered the local beauty contest and was crowned Miss Tulare. She subsequently went on to be named Miss Tulare County at the County Fair. Well, here was the perfect name for the new camellia—'Miss Tulare.' The Nuccios Nurseries propagated the cultivar and it was introduced this last fall. A gibbed 'Miss Tulare' won the sweepstakes award at the 1976 Camellia-Rama, held in Fresno, where Maurine, now Mrs. Bill Jones and 2-year old Wendy, the Abramson's grand daughter live. Walt Harmsen was able to get a picture of the three 'Miss Tulares.'

Directory of California Camellia Societies

Societies with asterisk (*) are Affiliates of Southern California Camellia Society

*CAMELLIA SOCIETY OF KERN COUNTY

President: Richard Stiern; Secretary-Treasurer, Mrs. Fred R. Dukes, Jr., 733 Del Mar Drive, Bakersfield 93307

Meetings: 2nd Monday, October through April (except 3rd Monday in November), at Franklin School, Truxton and A St., Bakersfield

*CAMELLIA SOCIETY OF ORANGE COUNTY

President: W. J. Kraemer; Sec., Mrs. George T. Butler, 1831 Windsor Ln, Santa Ana 92705 Meetings: 3rd Thursday, November through April, at Santa Ana Federal Savings & Loan Bldg., 1802 No Main St., Santa Ana

CAMELLIA SOCIETY OF SACRAMENTO

President: Donald Lesmeister; Secretary, Mrs. Frank P. Mack, 2222 G St., Sacramento 95816 Meetings: 4th Wednesday, October through April in Shepard Garden & Art Center, 3300 McKinley Blvd., Sacramento

*CENTRAL CALIFORNIA CAMELLIA SOCIETY

President: Bill Harris; Secretary, Mary Anne Ray, 5024 E. Laurel Ave., Fresno 93727 Meetings: 3rd Wednesday, November through February, in All-purpose Room, Del Mar School,

DELTA CAMELLIA SOCIETY

4122 N. Del Mar, Fresno

President: Jack Lewis; Secretary Donna Davi, 716 Central Ave., Pittsburg 94565 Meetings: 2nd Tuesday. November through March at Lafavette Fed. S & L. Walnut Creek

JOAOUIN CAMELLIA SOCIETY

President: Donald W. Hurst; Secretary, Mrs. Lewis Singer, 409 W. Pine St., Lodi 95240 Meetings: 4th Wednesday, October through May, United Methodist Church, Lodi

LOS ANGELES CAMELLIA SOCIETY
President: Ernie Pieri; Secretary, Mrs. Happy Stillman, 8159 Hollywood Blvd. Los Angeles 90069
Meetings: 1st Tuesday, December through April, Hollywood Women's Club, 1749 N. La Brea,
Hollywood

MODESTO CAMELLIA SOCIETY

President: Ronald Kellogg; Secretary, Mrs. Helen Caputi, 1605 Victoria Dr., Modesto 95351 Meetings: Second Wednesday October through May, at First Federal Savings, 2711 McHenry Ave., Modesto

NORTHERN CALIFORNIA CAMELLIA SOCIETY

President: Frank V. Purcel; Secretary, Bill Lockwood, 3226 Primrose Ln., Walnut Creek 94598 Meetings: 1st Monday, November through May, Chabot School, 6686 Chabot Rd., Oakland PACIFIC CAMELLIA SOCIETY

President: Judy Simmons; Secretary, Avonne Crawford, 2301 Sylvan Lane, Glendale 91208 Meetings: 1st Thursday, November through April, Central Bank of Glendale, 411 N. Central Ave., Glendale 91203

PENINSULA CAMELLIA SOCIETY

President: Augusts Meier; Secretary, Andrew R. Johnson, Jr., 28 Lloyden Dr., Atherton 94025 Meetings: 4th Tuesday, September through April, Municipal Services Center. 1400 Broadway, Redwood City.

*POMONA VALLEY CAMELLIA SOCIETY

President: Ronald D. Braid; Secretary, Mrs. Janice Hawes, 12625 Kellogg Ave., Chino 91710 Meetings: 2nd Thursday, November through April, Pomona First Federal Savings & Loan Assn. Bldg., 399 N. Garey Ave., Pomona

*SAN DIEGO CAMELLIA SOCIETY

President: Ben Berry; Secretary, Keith Nelson, 37 Shasta Street, Chula Vista 92010 Meetings: 3rd Wed., November-April, Rm. 101, Casa Del Prado Bldg., Balboa Pk., San Diego, 7:30 p.m.

SANTA CLARA COUNTY CAMELLIA SOCIETY

President: John M. Augis; Secretary, Mrs. Helen Augis, 2254 Fair Valley Court, San Jose 95125 Meetings: 3rd Tuesday September through April, at Great Western Savings Bldg., 2100 El Camino Real, Santa Clara

SONOMA COUNTY CAMELLIA SOCIETY

President: Jack Dodson; Sec., Violette Henderson, 117 Oak Shadow Dr., Santa Rosa 95405 Meetings: Oct. 28, Nov. 24, Dec. through May 1977 on the 4th Thursday of the month, in Multipurpose Room, Steel Lane School, Santa Rosa

SOUTHERN CALIFORNIA CAMELLIA SOCIETY

See inside front cover of this issue of Camellia Review

*TEMPLE CITY CAMELLIA SOCIETY

President: Marian Schmidt; Secretary, Mrs. Elsie Bracci, 5567 N. Burton Ave., San Gabriel 91776 Meetings: Friday, Nov. 12; Friday, Dec. 17; Thursday, Jan. 27; Thursday, Feb. 24; Thursday, March 24; and Thursday, April 25 at the Los Angeles County Arboretum Lecture Hall in Arcadia

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