

THE *Camellia*
REVIEW

A Publication of the Southern California Camellia Society



'Silver Ruffles'
Courtesy Nuccio's Nurseries

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One Dollar

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. Annual dues: \$6.00.

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THE COVER FLOWER

‘Silver Ruffles’ is a 1965 introduction of Nuccio’s Nurseries. The flower is a loose semi-double with ruffled petals, and reaches 5½” to 6” in diameter with a 3” depth. It joins Nuccio’s other two “Silvers” in the white group of camellias — ‘Silver Anniversary’ that was introduced on the nursery’s 25th anniversary in 1960 and ‘Silver Chalice’ that was introduced in 1963. The plant rowth of ‘Silver Ruffles’ is upright and rapid. It has not been seen much this year because it was put on the market before a large stock of blooming size plants had been built up. Based on the flowers that have been seen at the nursery, however, it should have a bright future.



I have had a yen for some time to write about flower arrangements in relation to their inclusion in camellia show schedules. I thought about the subject as I listened to and watched Rose Gish's excellent presentation of the subject of flower arrangements at the January S. C. C. S. meeting. When she publicly dedicated to me the one arrangement that contained two camellia blooms (the others had one), I decided that the time for writing has arrived.

The reason for Flower Arrangement Divisions not being popular today with camellia show management, which is the camellia hobbyist group, is that the arrangements contain so few camellias. No one who understands the principles of art as related to flower arrangement believes that the objective of an arrangement should be to see how many camellias can be used. They also understand that it is more difficult to use camellias effectively than to use roses, for example. I think that the reason for the difference in thinking between the camellia hobbyist and the present day flower arranger is a change which has taken place in the thinking of the latter group. I am not an authority on flower arranging. I have probably been exposed to it, however, more than most camellia husbands because of my wife's activities and my many years of walking along with her and listening to her comments in viewing public displays. So I venture to "pontificate".

Once upon a time the primary purpose of flower arrangements was to arrange flowers and foliage in an attractive and artistic manner. Accessories were used to supplement, to accent the flowers. Gradually the use of accessories has increased and included more and more so-called "objects of art". This has been accentuated by an increase in the number of flower arrangement instructors and the development of a cult which has emphasized design as an artistic achievement rather than the artistic arrangement of flowers. This trend has reached a point where the use of flowers now generally serves to implement the over-all design of the arrangement. In many cases, the flower is the accessory to the other elements in the arrangement rather than the primary object of the design. The term "flower arrangement" is still used, probably for the same reason that the term "dash board" is used to designate the instrument panel of the automobile.

There is nothing wrong with the present rules of "flower arrangement" — I mean "design". It explains to me, though, why there is a bridge between the school of design that uses flowers to accentuate the design pattern and the people to whom the flower is the important thing. It is improbable that many people in the camellia hobby will want to devote time and energy to a Flower Arrangements Division of a camellia show under these conditions.

Harold E. Gysler

WHY CAMELIAS

L. R. Shuey

Temple City, California

Editor's note: This article is based on a talk which Mr. Shuey gave to members of the Temple City Camellia Society.

During the past 35 years, I have grown a variety of plants, shrubs and ornamental trees, including many aristocrats of the flower kingdom and, based on my experience during those years, "no other plant gives so much in return for so little care as does the camellia." Let's examine this statement and endeavor to determine whether it is true. Throughout America and, particularly in Southern California, the finest and most spectacular flowers could be considered the orchids, camellias, azaleas, roses, iris, amaryllis, new hybrid lillies, epiphyllums, the multi-pastel tuberous begonias, strelitzias and hybrid Chinese magnolias. Every one of these is royalty in the flower kingdom, but what care is involved and what are the final rewards?

First, let us consider the rose, one of America's best loved flowers. A rose must be carefully pruned every year, sprayed many times against aphid and Fuller's rose beetle contamination. Subsequent to the fall blooming season, the average rose bush is an unattractive garden subject and remains so until new spring foliage develops after winter pruning. Roses cannot be successfully grown among other shrubbery, but must be confined to a particular bed in the garden and preferably in a sunny location. The average rose bush will decline, despite good care, after a 5-8 year period and must be replaced with new stock.

Orchids must be grown under glass to achieve the best results. The ever-popular cymbidium orchids require a glass or lath house, or seran. They can be grown outside, but care must be exercised that they have ample sunlight to insure proper spiking of

flower stems or a year's effort and care will be to no avail and few, if any, flower spikes will result. Secondly, cymbidiums should be fertilized every two weeks to obtain the maximum number of spikes and blooms. The Cattleyas and most other species of orchids are definitely a hot house flower and require regulated, thermostatic controlled temperature. After the blooming season, there is little beauty in an orchid or cymbidium plant.

Today, hybridists have recently created and are propagating and growing many new and beautiful hybrid lilies on vast acreage in Oregon and Washington. Japanese lilies have been crossed with wild American lilies and we currently have as many pastel and solid lilies as begonias or cymbidiums. However, and unfortunately, their blooming season is short. In California, many of them come into bloom during the summer and in periods of extremely hot weather, which further shortens their blooming period.

As to amaryllis: Some of the new improved Dutch hybrids are large and breathtaking. Many of the individual flowers range from 10" to 12" in diameter. They are, however, desert for snails and slugs and, in one night, a year's hard labor can vanish if adequate snail and slug control is not maintained. Amaryllis cannot tolerate too much water and they should be kept fairly dry following their relatively short blooming season.

Epiphyllums are one of the world's most beautiful and exotic flowers upon which I can speak with some authority. At one time I possessed in excess of 400 varieties, many of which were imported from Germany. Snails and slugs are also the foremost enemy of epiphyllums and devour not only

(Continued on next page)

the flower buds but also the new fronds. Most epiphyllums fronds must be espaliered or tied to bamboo or redwood stakes and all epiphyllums are grown in containers. Best results are obtained in temperate, sea coast climates. They do not perform well in the hot, dry inland valleys.

Tuberous begonias, like epiphyllums, do well only in the Coastal regions. The tubers must be replanted every year and, following the blooming period, taken up and placed in dry sawdust. The flowers of the tuberous begonias are, however, as brilliant as any in the flowering kingdom. In cold weather States, such as Oregon and Washington, they can only be grown in hot houses.

Iris are especially beautiful. Recently developed new varieties greatly supersede those of former years. Unfortunately, they also have a limited blooming period and to prevent over crowding, the rhizomes must be lifted and replanted every second or third year. Following the flowering period, the strap-like leaves add little to good landscaping.

Strelitzias, or Birds of Paradise, are worthwhile garden subjects, but do best in the sub-tropical or temperate belts of Southern California. They can be grown in the inland valleys but must be protected against damaging frosts and excessive hot weather.

The hybrid Chinese magnolias, with a wide range of color, form and growing habits, are beautiful companion plants to camellias and azaleas. They bloom, for the most part, during the peak of the camellia season and therefore do much to enhance the general appearance of any garden. The Chinese magnolias are, however, deciduous and devoid of leaves for one-half of each year. Their flowers make them truly royalty among the flowering trees and I can sincerely recommend that one or two varieties be planted in a garden.

Azaleas, more than any other flowering shrub, are a compatible and

companion plant to camellias. The finest of the English gardens, as well as those of our Southern States, feature wide and varied plantings of azaleas with camellia plants. Their hair-like roots make ample watering imperative. If the roots are allowed to completely dry out, the plant becomes a total loss. Many azaleas are susceptible to dieback, evidently caused by virus infection, for which, in many cases, there appears to be no cure.

We have now carefully considered the attributes and poor qualities of all of the above mentioned plants and are now able to compare them with camellias. None of them, in my opinion, is as meritorious as our camellia, which is climatically suited to most areas in the southerly portion of our State. In the Los Angeles Basin Area, they are easier to grow than geraniums. Not too many years ago, it was believed that one had to be blessed with a green thumb in order to successfully grow camellias. This fallacy has been dispelled in recent years as evidenced by the ever increasing number of blooms on our display tables and in our gardens. Their care and propagation has been made so easy that camellia lovers continue to plant many additional varieties in their gardens each year.

Camellias are outstanding for mass color effect during the blooming season and, if selected carefully, one can have some varieties in bloom from October through May. If treated by the use of gibberellin, it is possible to have camellias blooming nearly every month of the year.

When a plant has ceased to bloom, it is ideal as a foundation or landscape specimen for the garden, principally due to its evergreen foliage, interesting form and slow growing habit. Camellias can also be used in many parts of the garden as a hedge, ornamental or tubbed specimen for patio or a sun room.

The japonicas, sasanquas and re-

ticulatas are the three species of camellia most generally used for landscaping. Most camellia enthusiasts have a sufficient number of japonicas and reticulatas in their garden, but many do not take advantage of the many and varied uses of sasanquas. Sasanquas bloom earlier than most japonicas and will fit into a small space where a japonica or reticulata cannot be used. They are adaptable to espaliers for creating foliage patterns on otherwise uninteresting fences, fire places and wall spaces.

Some japonicas and particularly reticulata varieties will grow into small trees in a short period of time. I have several large specimens of both species in my garden, which necessitates pruning from 3-4 feet of top growth each year to keep them from growing over the top of the house and garage.

When one desires to plant a small tree in the yard or patio, why not a flowering variety? There are few, if any, flowering trees that can rival or surpass a 'Buddha' or 'Crimson Robe' reticulata, when in bloom.

Camellias, when contrasted to other plants and shrubs, are relatively free of pests and bugs. Aphids, scale and looper worms attack them at times, but the control of each of these pests is relatively easy.

Fifteen or twenty years ago a camellia was considered to be a shade plant. This belief has proven to be untrue. Many varieties are well able to tolerate between 50 and 75 percent full sun without any perceptible burn damage. Sasanquas and reticulatas are generally more sun tolerant than japonicas and other species of camellias.

Camellias, unlike most shrubs, can be grown in containers with excellent results. If grown in a container the plant can be repotted, if careful, during any month of the year. I had occasion during the past year to transplant 80 plants from small to larger containers during July and August,

two of our hottest months. Each plant had all of the soil removed from its roots before transplanting and I am happy to report that all of them are doing well and suffered no bud drop or damage.

After growing so many of our aristocratic plants for many years, I am thoroughly convinced that none of them are as rewarding to the horticulturist as the camellia for the reasons enumerated above. All of them, while magnificent and a crown jewel in the flower kingdom, have deficiencies not shared by the camellia, which is highly desirable not only for its perfection of blooms but also because of its beauty and attractiveness as a garden shrub. By proper pruning it can easily be kept within bounds as a shrub. It is not susceptible to freezing in this State, is constantly evergreen, drops very few leaves and can be trained as a hedge, a shrub or even a tree.

And so, I wish to reiterate my opening remarks, that I know of no other plant that gives so much in return for so little care as does the camellia. It merits the consideration of all and its rewards are great in comparison to the little time and effort expended for its care.

Mix-up of Harolds

One can never explain how obvious errors creep into the printed word. Following Harold Paige's name above his article in the February issue of CAMELLIA REVIEW appeared, big as a house, "Author of Camellias in America". Camellia old timers will know, of course, that Harold Hume, not Harold Paige wrote CAMELLIAS IN AMERICA. He wrote to me and said, "I can't tell how nice it is to have one's name associated with one of the great names of the camellia world. For the sake of the younger generation, however, it might be well to make a correction."

EDITOR

PRUNING CAMELIAS

T. Savige

Canterbury, Victoria, Australia

Editor's note: This article by Mr. Savige has been published previously, in the official bulletins of the Australian Camellia Research Society and the New Zealand Camellia Society and the Northern California Camellia Society's CAMELLIA BULLETIN. It is so well written, however, and the readership of CAMELLIA REVIEW contains so many people who have not had access to the publications in which the article has previously appeared that it is reprinted here.

After seeing the results of drastic pruning of old camellia trees in New Zealand and also having recently had the realisation thrust upon me that camellias, planted at six-foot spacings on a suburban block, will rapidly outgrow their allotted space, it has become necessary to give whys of pruning.

The reasons for pruning, besides that of holding the physical dimensions of the plants to controllable limits, include the proper shaping of the plants to suit their desired purpose such as standard, espalier or specimen; to maintain the plant's well-being; and to assist in keeping it healthy and thereby improve the quality of its blooms. Pruning may also be required if garden-grown plants are transplanted, and in the process losing part of their root system, or to repair storm or other incidental damage.

In considering the first reason it is as well to bear in mind that in the camellia we have a plant that will outlive any human individual and, if unchecked, will grow into a tree up to 30 feet high and as many across. However, by the competent use of secateurs and saw, plants as close together as 5 feet can be kept to a reasonable size more or less indefinitely.

Old trees that have become woody and sparsely furnished through neglect can be rejuvenated by being cut

back. Usually, as the camellia plants become old and large in size, the quality of the individual blooms falls off. Heavy pruning will induce a vigorous flush of new growth which will again produce first-class flowers. In fact, the only way to restore old camellias to health is severe pruning, as old, uncared-for trees usually bear long, knotty, virtually leafless branches which seem to lose the ability to initiate new growth. Examine these branches to try to find a reasonably vigorous shoot and cut back to this point. If such shoots are not evident, it is necessary to remove a large part of most of the branches, and watch for any consequent new growth and then cut back to this point. Where there is no response the limbs must be cut back flush with the trunk.

When transplanting large, old camellias a similar very drastic pruning is desirable. The writer has known old trees with trunks over nine inches across which when cut back to stumps, grubbed up and replanted at a new site, rapidly put out new growth and soon became large plants once more.

In the care of the usual run of garden camellias, where flower production is a prime consideration, the best time to prune them is as soon as the flowering season is over but before the new spring growth has started; otherwise camellias can be pruned at any time of the year. Indeed, it is recommended that the pruning and shaping of the plants be carried on, in some measure, through most of the year, and this includes cutting scions in the summer and blooms in the winter. If any pruning is done while the plants are in bud, consideration can be given to leaving healthy limbs with the best bud set,

removing the weak, twiggy interior growth and opening up the plant where close-growing branches will later cause bloom damage and distortion. This can be done with any disbudding programme and it helps towards improved flower quality.

Later, when cutting flowers, cut with long stems, particularly if on weak growth, and then, when the blooming season is over, go over the plants and complete the pruning job, cutting back to the main branches any stubs left by flower gathering.

The pruner needs to examine his plants with a critical eye, comparing the thin interior growth with the outer apical shoots; he will soon learn to differentiate between good, healthy wood and wood that is best removed. All interior-growing thin twigs with weak terminal buds should be removed, and branches that cross through the bush taken out. Low, ground-sweeping limbs and sufficient of the outer growth should be removed so that flower buds will be able to form and open undamaged by adjacent foliage.

Pest control is helped by proper pruning, as scale favours the dark, protected interiors of densely growing plants which, moreover, are difficult to cover properly with sprays.

The pruner should not worry about being over-enthusiastic, as new top growth will always restore the leaf-to-root balance. In fact, pruning can be used to assist in rehabilitating a root system damaged by transplanting, root-rot or drying out. The root system is insufficient to support the top and this is soon evidenced by leaf drop, dieback and short, weak new growth; it usually takes some years to recover if it ever does. The removal of sufficient of the top to restore some balance generally results in the production of improved new growth provided the underlying cause of the trouble is also corrected.

When pruning for reasons of appearance, such as to produce a cer-

tain shape, improve the form of leggy growers such as Kelvingtoniana or for training espaliers, the growth habits of the varieties to be used should be carefully studied. Generally, mature specimens of camellia plants, when properly grown, develop a particular shape typical of the variety. This can be seen in the popular-like growth of Alexander Hunter and Margaret Waterhouse; the upright habit of the Hikaru Genji group, and the spreading growth of Lady Clare and Chandler's Victory. It helps to select a variety to suit the shape in mind and then stake and prune the plant towards this shape as it grows.

Many varieties of camellias grown in crowded nursery conditions develop one tall vigorous growing leader that takes some years to fill out. If tall, upright growth is desired these can be kept symmetrical by staking and tying and the removal of branches that show a tendency to form a fork in the leader. If a bushy form is required, abundant side growth can be induced by repeated nipping out of the top shoots which will force growth from the buds in the leaf axils back from the tip.

When cutting flowers, scions or just pruning, remember to cut back to a lateral bud which will grow, or if there is no bud, cut back to the branch. In removing branches, do not leave a stub which can die back but cut flush at the main branch or trunk. By this means quicker healing of the cut areas reduces the possibility of disease and maintains the health of the plant. Large wounds are best coated with grafting mastic, roof paint or pitch. A plant in good health will grow over a two-inch diameter wound in about two years.

A final recommendation, not for the tidy gardener, is to cut up your pruning as you go and let them fall over the root area of the plants. What better mulch can a camellia have than camellias leaves?

Show Results

POMONA VALLEY CAMELLIA SOCIETY

Pomona, California — February 12-13, 1966

- Sweepstakes — John and Mary Movich, Pomona
Sweepstakes Runner-up — Frank Reed, Pasadena
Best Japonica over 4" — 'Clark Hubbs Var', Harry F. Vedder,
San Bernardino
Best Japonica over 4" Runner-up — 'Carter's Sunburst', Amos W. Kleinsasser,
Bakersfield
Best Japonica under 4" — 'Pale Princess', Mel Canfield, Bakersfield
Best Japonica under 4" Runner-up — 'Spring Sonnet', Frank Reed, Pasadena
Japonica Blooms on Court of Honor —
'Reg Ragland', Mel Canfield, Bakersfield
'Glen 40', John and Mary Movich, Pomona
'Emmett Barnes', Mel Canfield, Bakersfield
'Angel', Amos W. Kleinsasser, Bakersfield
'Billie McCaskill', Mel Canfield, Bakersfield
'Jennie Mills', Harold Dryden, San Marino
'Elegans Supreme', John and Mary Movich, Pomona
'Clarise Carleton', Amos W. Kleinsasser, Bakersfield
Best Group of 3 Japonicas — 'Guilio Nuccio Var', Harold Dryden, San Marino
Best Group of 3 Japonicas Runner-up — 'Reg Ragland', Harold Dryden,
San Marino
Best Boutonniere — 'Pouf', Mr. and Mrs. Ernest Pieri, San Gabriel
Best Boutonniere Runner-up — 'Revere's Baby Pink', Edwards H. Metcalf,
San Marino
Best Group of 3 Boutonnieres — 'Fircone', Edwards H. Metcalf, San Marino
Best Group of 3 Boutonnieres Runner-up — 'Mrs. W. M. Hite', Edwards H.
Metcalf, San Marino
Outstanding Boutonnieres Blooms on Court of Honor —
'Baby Sis', Mr. and Mrs. Harold Rowe, Upland
'Allison Lee Woodroof', Mr. and Mrs. Harold L. Rowe, Upland
'Wilamina', John and Mary Movich, Pomona
'Wart', Edwards H. Metcalf, San Marino
Best Reticulata — 'Lion Head', H. S. Putnam, Long Beach
Best Reticulata Runner-up — 'Purple Gown', A. Wilkins Garner, Glendale
Best Group of 3 Reticulatas — 'Chang's Temple', H. S. Putnam, Long Beach
Best Group of 3 Reticulatas Runner-up — 'Crimson Robe', Jack Mandarich,
Menlo Park
Best Other Species Bloom — 'Dawn', Edwards H. Metcalf, San Marino
Best Hybrid Bloom — 'Howard Asper', Mr. and Mrs. Harold L. Rowe, Upland
Best Seedling — 'Tom Knudsen', Frank W. Maitland, Sylmar
Best Sport — 'Sunset Oaks', Kramer Bros. Nursery, Upland
Best Special Culture Japonica — 'Ballet Dancer', Amos W. Kleinsasser,
Bakersfield
Best Special Culture Japonica Runner-up — 'Clark Hubbs', Mr. and Mrs.
Alvin L. Gunn, Lynwood
Best Special Culture Reticulata — 'William Hertrich', Jack Mandarich,
Menlo Park
Best Collector's Table — Walter F. Harmson, Claremont
Best Collector's Table Runner-up — James C. Reher, Jr., Ontario

Best Professional Bloom — 'Satellite', Kramer Bros. Nursery, Upland
Best Professional Bloom Runner-up — 'Elegans Pink', Clark Thomas,
San Dimas

SAN DIEGO CAMELLIA SOCIETY

San Diego, California — February 12-13, 1966

- Sweepstakes — Mr. and Mrs. Fred Hamilton, Santa Maria
Sweepstakes Runner-up — Ray Greer, Spring Valley
Boutonniere Sweepstakes — Dr. Leland Chow, Bakersfield
Best Japonica — 'Mark Alan', Mr. and Mrs. Fred Hamilton, Santa Maria
Best Japonica Runner-up — 'Ballet Dancer', Mr. and Mrs. Fred Hamilton,
Santa Maria
Japonica Blooms on Court of Honor —
'Clark Hubbs', Mr. and Mrs. John Robinson, La Canada
'Don Mac', Dr. Leland Chow, Bakersfield
'Ecclefield', Mr. and Mrs. B. M. Pace, Upland
'Guilio Nuccio', Mr. and Mrs. Stanley Miller, El Cajon
'Mathotiana', C. T. Higgins, San Diego
'Pink Pagoda', Mr. and Mrs. Louis Greenleaf, San Diego
'R. L. Wheeler', Mr. and Mrs. Fred Hamilton, Santa Maria
'Reg Ragland', Mrs. Monique Peer-Morris, Los Angeles
'Tomorrow Var', Dr. Leland Chow, Bakersfield
'Wonderland', Mr. and Mrs. Fred Hamilton, Santa Maria
Best Group of 5 Japonicas — 'Betty Sheffield Supreme', Mr. and Mrs. W. F.
Goertz, San Marino
Best Miniature Japonica — 'Fircone Var', Mr. and Mrs. John Robinson,
La Canada
Best Small Japonica — 'Florence Daniell', Mr. and Mrs. Stanley Miller,
El Cajon
Best Reticulata — 'Confucius', Mr. and Mrs. Fred Hamilton, Santa Maria
Best Reticulata Runner-up — 'Buddha', Mr. and Mrs. A. E. Krumm, Altadena
Best 3 Reticulatas — Mr. and Mrs. J. V. George, La Mesa
Best Other Species Bloom — 'Showa Supreme' (Hiemalis), Don Curtis,
La Mesa
Best Hybrid — 'Howard Asper', Mr. and Mrs. Slane Stump, Escondido
Best Seedling — Unnamed Reticulata Seedling, Mrs. Monique Peer-Morris,
Los Angeles
Sweepstakes Special Culture Division — W. F. Goertz, San Marino
Best Special Culture Japonica — Mr. and Mrs. George Kalin, La Mesa
Special Culture Blooms on Court of Honor —
'Ballet Dancer', Mr. and Mrs. Fred Hamilton, San Maria
'Clarise Carleton', Dr. Leland Chow, Bakersfield
'Clark Hubbs', Mr. and Mrs. Alvin L. Gunn, Lynwood
'Hawaii', Mr. and Mrs. Fred Hamilton, Santa Maria
'Mrs. D. W. Davis', Mr. and Mrs. A. H. Dekker, Glendale
'Spring Triumph', Mr. and Mrs. Fred Hamilton, Santa Maria
'White Fairy', Dr. Leland Chow, Bakersfield
'Willow Wand', Mr. and Mrs. W. F. Goertz, San Marino

PENINSULA CAMELLIA SOCIETY

Redwood City, California — February 19-20, 1966

- Sweepstakes — Fred Hamilton, Santa Maria
Sweepstakes Runner-up — George Stewart, Sacramento

(Continued on next page)

- Best Large Japonica — 'Tiffany', T. D. Pratt, San Jose
 Best Large Japonica Runner-up — 'Mathotiana', O. E. Tomlinson, San Jose
 Best Medium Japonica — 'Commander Mulroy', Mrs. E. A. Grebitus, Jr., Sacramento
 Best Medium Japonica Runner-up — 'Wildfire', Sergio Campagna, San Mateo
 Best Boutonniere Japonica — 'Fircone Var', Anthony F. Pineiro, Modesto
 Best Boutonniere Japonica Runner-up — 'Hopkins Pink', Sal B. Davi, Pittsburg
 Best 3 Japonicas — 'Kramer's Supreme', Harvey L. Morton, Lafayette
 Best 3 Japonicas Runner-up — 'Pink Pagoda', Sal B. Davi, Pittsburg
 Best 6 Japonicas — 'Donckelarii', Fred E. Carnie, Jr., Carmichael
 Best 6 Japonicas Runner-up — 'Mrs. Tingley', J. Holtzman, Crows Landing
 Japonicas on Court of Honor —
 'Adolphe Audusson Var', Sal Davi; 'Apple Blossom', Fred Hamilton; 'Arabian Knights', Richard Roggia; 'Ave Maria' (group of 3), R. C. Poertner; 'Betty Sheffield Supreme', James P. Casey; 'C. M. Hovey', John Augis; 'Cara Mia', O. E. Tomlinson; 'Clark Hubbs', Sal Davi; 'Coronation', John Augis; 'Elizabeth LeBey', Richard Roggia; 'Emmett Pfingstl', Miss Mary Musante; 'Guilio Nuccio', Mrs. Van McKee; 'Hawaii', Richard Roggia; 'Indian Chief', Richard Roggia; 'Kramer's Supreme', Harvey L. Morton; 'Magnoliaeflora', F. L. Rankin; 'Party Dress', Fred Hamilton; 'R. L. Wheeler Var', Richard Roggia; 'Reg Ragland', R. C. Poertner; 'Spring Triumph', Fred Hamilton; 'Sweet-heart', Frank T. Bartucco; 'Uncle Sam Var', Sal Davi
 Best Reticulata — 'Buddha', George Stewart, Sacramento
 Best Reticulata Runner-up — 'Captain Rawes', John Augis, San Jose
 Best 3 Reticulatas — 'Crimson Robe', Jack Mandarich, Menlo Park
 Best 3 Reticulatas Runner-up — 'William Hertrich', Harry Butler, Redwood City
 Reticulatas on Court of Honor —
 'Chang's Temple', John Augis; 'Confucius', Jack Mandarich; 'Crimson Robe', Jack Mandarich
 Best Hybrid — 'Howard Asper', George Stewart, Sacramento
 Best Seedling — Unnamed hybrid, Richard Roggia, San Jose
 Best Seedling Runner-up — Unnamed japonica, Louis Gioni, Redwood City
 Best Bloom in Judges' Display — 'Clark Hubbs', Fred Heitman, Lafayette
 Best 12 Blooms, all different — Mrs. E. A. Grebitus, Sacramento

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TEMPLE CITY CAMELLIA SOCIETY

Los Angeles County Arboretum, Arcadia, California

February 19-20, 1966

- Best Large Japonica — 'Drama Girl', Dr. and Mrs. John Urabec, La Canada
Best Large Japonica Runner-up — 'Betty Sheffield Supreme', Dr. Leland Chow, Bakersfield
- Best Medium Japonica — 'Helen K', Dr. Leland Chow, Bakersfield
Best Medium Japonica Runner-up — 'Prince Eugene Napoleon', Mary Thomas
- Best Small Japonica — 'Kitty', Pat Novak, Van Nuys
Best Small Japonica Runner-up — 'Wilamina', Mr. and Mrs. Laurence Shuey, Temple City
- Best Miniature Japonica — 'Hopkins Pink', John and Mary Movich, Pomona
Best Miniature Japonica Runner-up — 'Pearl's Pet', Dr. Leland Chow, Bakersfield
- Best 3 Japonicas — 'Tiffany', Dr. and Mrs. John Urabec, La Canada
Best 3 Japonicas Runner-up — 'Betty Sheffield Supreme', A. Wilkins Garner, Glendale
- Best Reticulata — 'Noble Pearl', Dr. Norman Palmer, North Hollywood
Best Reticulata Runner-up — 'Buddha', Pete Folino, Arcadia
- Best 3 Reticulatas — 'Crimson Robe', Mr. and Mrs. Laurence Shuey, Temple City
- Best Hybrid — 'Howard Asper', Mr. and Mrs. J. V. George, La Mesa
Best Hybrid Runner-up — 'Waltz Time Var', Melvin Canfield, Bakersfield
- Best Species — 'Shishi Gashiri', John and Mary Movich, Pomona
Best Special Culture Flower — 'Tomorrow's Dawn', M. W. Abramson, Tulare
Best Special Culture Flower Runner-up — 'Betty Sheffield Supreme', Dr. Leland Chow, Bakersfield



The above pictures of Bill Goertz's 'Kramer's Supreme', the one on the left taken immediately after it was pruned in March 1965 and the one on the right after the season's full growth had taken place, show what occurs when a healthy camellia plant is pruned drastically.

QUESTIONS and ANSWERS

A. Wilkins Garner

Q. As the show season nears the end and the blooming season for most varieties will soon be over, what action should be taken with regard to plant culture?

A. Many of your varieties will continue to bloom for another month or longer and many people will want to enjoy these blooms. Examine your plants and make a preliminary pruning plan. As you cut these late blooms, cut back to an active eye that points in the direction you wish your plant to grow. This will give the plant better shape and balance. Continue this pruning plan, leaving untouched only those branches that have buds you want to bloom out. You will finish the pruning job as the remaining buds bloom out.

If you haven't already done so, immediately remove all dead wood, being careful to re-trim with a sharp knife as your pruners will have left stubs. As an added phase of your pruning plan, remove all inside, crossing and weak spindly branches. It is best to sacrifice any potential flowers, which at best will be of questionable quality, for the future good of your plant. Follow your pruning plan throughout your entire collection until a complete pruning job is done. Where larger branches are pruned and after re-trimming smoothly, cover with a "tree seal". This is to prevent the loss of moisture, entry of pests and disease until your plant has time to grow new bark to cover the wound.

In the case of older plants with which you are not satisfied, one aid in re-activating them is to do a major job of pruning by thinning out heavily, at least half the branches, and cutting back for proper shape. This will take some of the load off the root system and give more action to the

remaining portion of the plant. In these cases especially, be sure to re-trim and apply "tree seal".

After you have done a satisfactory pruning job, you should do a thorough spraying. Use a spray containing Malathion-Lindane combination. There are sprays on the market containing these ingredients plus other valuable materials. Your nurseryman can provide you with such sprays. Follow directions on the label. After spraying the foliage thoroughly, apply Dieldrin granules to the soil around the plants to kill soil worms and root weevils which feed on roots. Dieldrin also controls ants, however some like to spray the entire area (including containers where container grown) with wettable type Chlordane for added protection against ants.

You should now start your fertilizer program. There are almost as many fertilizer plans as there are growers. Many like the organic dry type which is sold by various manufacturers as "camellia fertilizer", which is 80% cottonseed meal plus other elements including trace elements. Blood meal can be added to increase the nitrogen content. Many like to use the liquid type for the first feeding, this fertilizer being available in concentrated liquid form or water soluble powder. Use one-half the amount called for in the directions. Water thoroughly before and after applying the dry mix and the liquid form.

Growing has started or will start very soon. During this first lush growth period, your plants require as much moisture as at any time of the year. So be sure and provide this condition.

"IN THE SPOTLIGHT"

Caryll and Mildred Pitkin

ELEANOR MARTIN

This California seedling has the qualities to make it an "everyone's favorite" because it not only has the things we like in a camellia but is free from the faults that annoy us. It is large (you wouldn't call it huge), a good red color, perfect balance semi-double form, large concave petals. It holds well on the sturdy upright plant, falls in one piece, sets just about the right number of buds and always opens. Perhaps "dependable" would be a good one word description for this seedling of 'Donckelarii' which first bloomed in 1957. Mr. Caesar Breschini of San Jose originated 'Eleanor Martin' and named it for the elder of his two daughters.

FRANCIE L.

Ed Marshall of the Huntington Gardens found a nice 'Buddha' bloom one day and, just for fun, put some pollen from the saluenensis 'Apple Blossom' on it. Well, it took and later one of the seeds bloomed out into a rich, rose pink, high, semi-double of the usual beautiful reticulata form. It's about five to five and one-half inches, occasionally as much as six without any help from gib, and usually sets buds all down the branch, saluenensis fashion and they all open about the same time. The interesting name honors the propagator's wife. It will be released in the fall of 1967 by Nuccio Nurseries and Redwood Empire Nursery.

CHERYL LYNN

Those of us who saw the Descanso show two years ago will remember the display of light pink formals in the Nuccio section which were grown by Howard Collier of Chowchilla. Perfectly formed four to four and one-half inches but with larger petals

it is no wonder that it attracted a lot of favorable comment. The foliage is medium green; it sets buds early, blooms mid-season and always opens fully. It will be released by Nuccios this fall and those of us who like pink formals will put it on our "must have" list.

TOM CAT

Dr. Albert Tuck of Thomasville, Georgia bloomed TOM CAT as a chance seedling but from selected seed. It was a tall stringy plant which bloomed at the age of five. It was interesting but raised no eye brows. At six it bloomed heavily and was greatly admired. In each of the following two years one bloom was entered in shows and both times received the seedling award. In 1964 it was registered as a large light rose-pink semi-double with irregular pronounced fluted petals. The variegated form is thought to be even better. It is of hardy upright growth and its power to withstand cold temperatures is above average.

Quoting Dr. Tuck: "During the years 1962 and 1963 no one could find a suitable name for the flower and finally it was named TOM CAT following the 1963 Thomasville show by two of my doctor friends. They felt the blossom and plant unusual and wanted a man's name so after great discussion and much champagne the Camellia world had a 'Tom Cat'."

We saw some thirty blooming plants in Macon and the gibbed flowers were spectacular. Since it is not yet in commerce we can not say what it will do other places and without gib, but Dr. Tuck thinks every camellia fancier should have a 'Tom Cat' in his garden and we are inclined to agree.

“CAMELLIA NOMENCLATURE” -- A GROWING PROBLEM ON CLASSIFICATION OF SIZE

Harold E. Dryden

The approach to publication of a book such as CAMELLIA NOMENCLATURE might be likened to the continuity of a ruling monarchy as exemplified by the saying “The King is dead, long live the King”. The 1966 edition of the book was hardly off the press before Editor Bill Woodroof started to think of improvements for the 1968 edition. I have been impressed with the urgency with which so many people have asked for the new book. Some have wanted it promptly because of need in connection with judging at forthcoming shows. Others have wanted it just to have the latest information with regard to their hobby. The Southern California Camellia Society recognizes its responsibility as publishers of the book to have it meet its objective as the universal authority on camellia varieties.

Unfortunately, this Society alone cannot assure the reliability of descriptions of the many hundreds of varieties of the different species that are listed in CAMELLIA NOMENCLATURE. First, of course, many of the varieties are not grown in this area and the source of the descriptions must of necessity come from the areas where these varieties originate or are now grown. Second, all varieties do not produce uniformly in all areas and to base descriptions on performances in Southern California would defeat the purpose of the book; i. e., a camellia authority for use throughout the camellia growing world. Finally, no Editor is going to arbitrarily change descriptions that have been provided by others whose reliability and integrity are beyond question. The situation seems to resolve itself into one of collective responsibility among camellia people

with regard to the material that is supplied to the Editor.

An important aspect of present descriptions that needs attention for the 1968 edition is with regard to size, particularly those varieties of Japonica that are described as Very Large. A Very Large camellia is defined as “over 5 inches”. It is the intent, of course, that this size be attained consistently and not only occasionally. It is the Society’s intent, also, that descriptions are based on conditions of normal outdoor growing. The number of varieties that are included in the Very Large group and do not generally produce very large flowers in outdoor growing has increased to the point that corrections should be made in the next edition for the varieties now incorrectly classified, and steps should be taken to minimize future incorrect listings.

Prior to 1940 there were only four varieties listed as Very Large. During the ten year period 1940 to 1949 four Very Large varieties were added. In the five years 1950 to 1954 thirteen Very Large varieties were added, thirty-three more in the five years 1955 to 1959. There were only 54 Very Large varieties registered at the end of 1959. Then the dam broke, as shown by the following numbers of registrations of Very Large varieties by years since 1959: 1960, 12; 1961, 18; 1962, 12; 1963, 9; 1964, 11; 1965, 21; total 6 years 1960 to 1965, 83.

This increase in the number of Very Large varieties would present no problem if the varieties generally lived up to their descriptions. They do not, however. An excessive proportion is not attaining that size, certainly in California where they are outdoor grown and we understand

also in areas where they are grown both outdoors and under glass. Of the 105 Very Large varieties that were registered at the end of 1963 for which there has been time for testing, only one-third have tested Very Large in outdoor growing. An equal number have failed to meet the Very Large test. Tests for the remaining varieties have not been concluded or have not been made. CAMELLIA NOMENCLATURE is thus failing to meet its objective as an authority on camellias in this "Very Large" group.

We would expect an increase in the number of Very Large registrations along with the increase in the propagation of camellia seedlings. This does not explain the increasing tendency in failures to test up to description under outdoor growing. Of the 39 Very Large registrations in the three years 1961 to 1963, for example, only 7 have so far tested to their classification.

One can surmise among the following explanations as to the reason for this situation.

(a.) The normal tendency of people to exaggerate in connection with their own progeny, particularly when a seedling is named for "Aunt Matilda" or "Uncle Jimmy", may have caused them to stretch the tape measure just a mite, or possibly their fancy caused them to err when they transcribed their data from their memory to the registration form.

(b.) The extensive use of glasshouse culture that started around 1955 in the areas affected by cold weather could have caused the data on the registration forms to be based on such culture and not on outdoor growing, without a statement on the registration form to that effect.

(c.) The use of gibberellic acid that started around 1963 and 1964 could have influenced descriptions of size, as in the case of item (b) above.

(d.) Some people may not have understood that the descriptions in CAMELLIA NOMENCLATURE are taken directly from the registration forms of new varieties.

It is necessary in the interest of reliable camellia nomenclature and descriptions that camellia growers make a sharp distinction between what they do for their own pleasures and what they say that affects the reliability of CAMELLIA NOMENCLATURE as an authority on camellias for the entire camellia world. It is one thing to derive the pleasures that come with glasshouse grown flowers and with the earlier, often larger blooms that one obtains with gib. It is something different, however, to use these flowers as a basis of description when registering a new seedling.

Two steps are reasonable and are suggested toward the correction of what I call this "Very Large" situation. First, steps should be taken to correct present wrong descriptions. Preferably, originators of varieties that have not tested up to original descriptions should furnish corrected statements of registration to the American Camellia Society. Also, camellia growers should consider themselves as members of a Committee of the Whole to report to the Editor of CAMELLIA NOMENCLATURE when he finds that varieties, outdoor grown, do not meet the size that is given in the description. Size could thus be corrected on a concensus basis.

Second, people who register new varieties with the American Camellia Society should to the extent possible base their descriptions on outdoor growing. If outdoor growing is not practical in the area where the seedling originates, the registration statement should state that the description of size is on the basis of glasshouse growing. Along with this step, regis-

(Continued on page 32)

RETICULATAS IN DESCANSO GARDENS

Mark Anthony, Superintendent
Descanso Gardens, La Canada, California

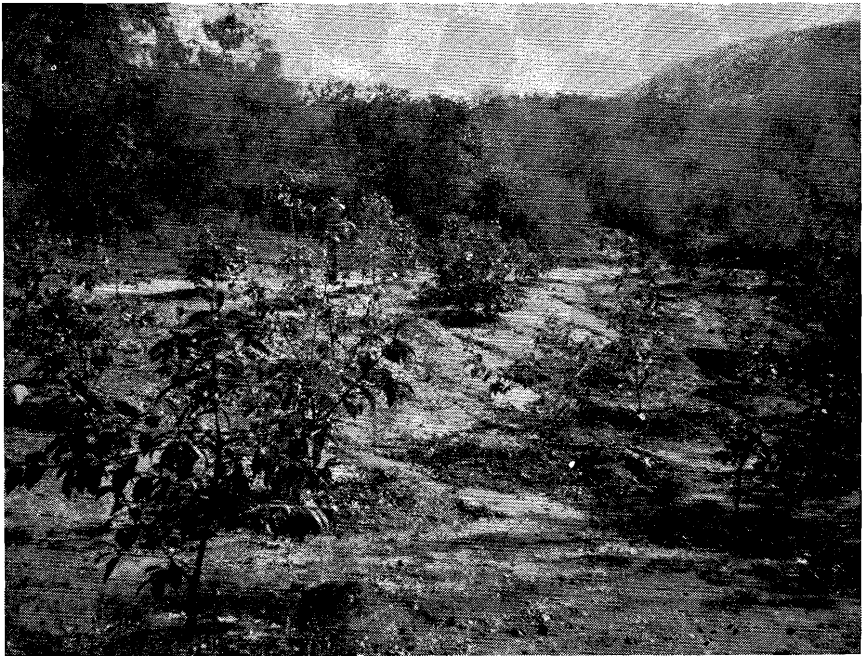
Editor's note: The following are edited extracts from talk by Mark Anthony to members of Los Angeles Camellia Society. The talk was tape recorded.

We have planted many reticulatas at Descanso Gardens, some with success but not with the success that I thought we should have. I had heard that reticulatas like a little more sun so I said, "Let's see how much sun they actually will take." There was an open decomposed granite space, right out in the full sun, on a hillside along the road going up to the Hospitality House. I cleaned off the weeds, dug nice big holes and put good soil in the holes. I planted about 40 reticulata plants in this area with full sun from early morning till night to see what would happen to them in the full sun.

The first year they turned a little yellow and looked a little peaked but they didn't die. The second year they

looked a whole lot better. Maybe one or two of them died, but the one or two that died had variegated leaves, indicative of virus. The next year one or two more died. They also had variegated leaves — virus. This indicated to me that reticulatas with variegated leaves, like all camellias, don't like full sun. The leaves will burn, dry up and drop off. In the shade the variegation will hold and the plant won't be too bad, but I have found that both japonicas and reticulatas with virus don't like the sun and will die when planted in it.

In grafting these reticulatas after they came from China we tried to propagate them real fast. Everybody wanted them and we weren't particular as to what kind of understock we put them on. People were putting them on anything they happened to have around and we got such a crop



These reticulatas grow in full sun at Descanso Gardens.

of virus in our reticulatas that we have been having all kinds of trouble with them since. To those of you who are having trouble with your reticulatas, I'll bet you that in nine cases out of ten, your trouble is in your understock. At Descanso Gardens for the last year or two and from now on, we are grafting reticulatas on nothing but seedling reticulatas. That's a good use for the wild reticulatas. We are growing lots of seedlings of it just for the purpose of growing our reticulatas on a compatible root stock.

Going back to the reticulatas that are planted in the sun, they're looking real good now. They look just as green as grass, as healthy as can be, bushing out and growing real nice. I'll admit, of course, that some are looking much better than others. I think that if you people will plant your reticulatas where they will get a good bit of sunshine they will do better. Mulch them by all means. The roots like to be cool, so give them a good mulch of, say, pine needles or oak leaves.

Another thing to remember is that reticulatas are not bushes. We have been accustomed to the japonica and have thought of it as a bush. Well, the reticulata is not a bush. It is a tree. When we hear of the old ones that are 400 years old and are 50 feet high, that tells you that they are trees, not bushes. That's why so many people say that they're scraggly, that they don't have a lot of leaves on the inside, that they grow at the end of the branches. Well, if you look at most of your trees, look at our oak trees at Descanso, they are not as fat and roly-poly, as round, right down to the ground. They have their leaves way out on the ends and they have big thick branches down below. I think that's what a reticulata should be, a tree where you have the flowers out on the ends and not try to grow them as a roly-poly bush. If you realize that I think you'll like them a lot better. In, oh, 400 or 500 years,

you come up to Descanso and we'll see if they are trees or not.

We got the idea of growing reticulatas as trees as we know tree roses. It's an easy thing to do because they like to make a long trunk without any trouble at all. Let them grow up to shoulder height, cut the top out and they will bush out. I now have some nice trees of reticulatas which are quite pretty. Any of you can do it. It makes an attractive plant, something a little bit different. The 'Captain Rawes' would be a lot harder to do than the others because it is harder to pinch back. On most of all the other Yunnan reticulatas you can pinch them back and bush them out and make a nice headed tree without too much trouble.

A few pointers that we came up with: We found that the bugs like reticulatas a whole lot better than they like japonicas. Why that is, I don't know. We have had most of ours grown under the oak trees until I put this batch out in the sun. We have a little caterpillar that grows on the oak leaves, and he likes to come down on a thread to the camellias to get at the new growth just as it's starting to unfurl. There are a million japonicas around but the bugs won't touch one of them. The only thing we have found that would do the trick is Cygon. The bugs seemed to get to the center of the new shoots before we could kill them. Malathion wouldn't quite get in there but Cygon when sprayed on the reticulatas seems to get in there and does the trick. Lately we have been spraying the trees over the reticulatas early with malathion to get the bugs up in the trees and not give them a chance to eat our reticulatas' new shoots.

Then quite often we find the reticulata leaves with holes or eaten along the side. They have been eaten by the Bracirinus beetle or the Fuller's rose beetle. They come up from the ground and scallop little holes in the

(Continued on next page)

reticulata leaves. They are quite easy to control. Just dust around them once or twice a year with a little Dieldrin dust.

Another thing we have observed is that reticulatas cannot take the cold weather that japonicas can take. I planted six or eight reticulata plants in full sun down by my office in Descanso Gardens. They do beautifully in the full sun all summer long but just as soon as we get cold weather, as we have been having, below 30 degrees with a lot of ice on the ground, the buds freeze and fall off, the leaves start turning yellow and the plants look very unhappy. Up on the side of the hill where it is warmer, the plants in full sun that I have been talking about are doing fine. This happens every year when it gets cold, so we know the reticulata is not the plant to grow outdoors in cold weather.

Another item: A couple of years ago Mrs. Frank Storment offered us a gorgeous reticulata 'Tali Queen' in memory of her late husband Frank. We gladly accepted it. She said that some of Frank's friends would be happy to ball it out carefully and deliver it to Descanso. They were all expert camellia men, she said, and would know just how to do it and take wonderful care of the plant. The day set for delivery of the plant was April 15th. You know what's happening to a reticulata plant on April

15th — it's in new growth. But I figured these "experts" were going to take such good care of it that we'd take a chance. Anyway, we wanted the plant because it was the one from which Frank had picked the blooms that won awards at Descanso camellia shows. So out they came with their trailer, with this reticulata wrapped up in an old burlap sack with dirt laying all over the bottom of the trailer. I said, "I thought you guys were going to make a real good ball for this plant." "Yeah," they answered, "but can you make a ball when there is a two-inch pipe going smack through the middle of the root."

Well, I planted it carefully, staked it up, mixed a lot of peat moss with the soil and then gave it a real good dousing of "Super-Thrive". Now, a lot of you people say, "Oh, this vitamin B-1, this Super-Thrive stuff, it's all for the birds, it doesn't do any good." I've been using it since the day it was discovered out at Cal Tech back in 1926 or 1927 and I still swear by it. I pinched off all the nice green shoots. Well, the plant didn't die, it just sat there and looked pretty good. About November 15th of that same year, when reticulatas shouldn't be growing, it started to grow and just burst out all over with new growth. Buds set on this new growth. They were late blooming but they were gorgeous, great big flowers.

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That just goes to prove that you can do almost anything with camellias and get away with it, if you're just a least bit careful, if you have a little love for them and give them a little bit of care. You can move them at the wrong time, you can almost turn them upside down. If you can now see this plant! Knocking off all the growth buds did a world of good, because the plant just burst out all over the place with new growth. It is nice and fat, just the way you'd like a reticulata plant to grow if you had anything to say about it.

We are going to plant more reticulatas at Descanso and try to get a real representative collection of them as new ones come out.

Winning Blooms At S. C. C. S. Meetings

JANUARY MEETING

Non-Treated Japonica

Large—

'Guilio Nuccio', 'Joshua Youtz',
'Tiffany', 'Mathotiana Supreme',
'Drama Girl'

Medium and Small—

'Wildfire', 'Ave Maria',
'Debutante', 'Rosea Plena',
'Nina Avery'

Treated Japonica

Large—

'Clark Hubbs', 'David Wirth',
'Tomorrow's Dawn', 'Clark Hubbs',
'Mrs. D. W. Davis'

Medium and Small—

'Pax', 'Spring Sonnet', 'Kumasaka',
'Purity'

Miniature

'Pearl's Pet'

Reticulata

'Lion Head', 'William Hertrich'

Hybrid

'Leonard Messel', 'Monticello'

FEBRUARY MEETING

Non-Treated Japonica

Large—

'Tiffany', 'Drama Girl', 'Guest of
Honor', 'Betty Sheffield Supreme',
'Grand Slam'

Medium and Small—

'Frances Butler', 'Jennie Mills',
'Ballet Dancer', 'Flame Var',
'Herme' ✂

Treated Blooms

Large—

'Ecclefield', 'Clark Hubbs',
'Hawaii', 'Ville de Nantes',
'Laura Walker'

Medium and Small—

'Jennie Mills', 'Thelma Dale',
'Elena Nobile', 'Emmet Pffingstl',
'Spring Sonnet'

Miniature

'Pearl's Pet', 'Bambino'

Hybrid

'Charlene', 'Leonard Messel'

Reticulata

'Tali Queen', 'Willow Wand'

After four meetings of the current camellia season, Melvin Gum is leading in total points in the competition, with Bill Goertz in second place and Alvin Gunn in third place.

Los Angeles Camellia Society

The Society will hold its April meeting on Tuesday, April 5, 1966, at the Women's Club of Hollywood at 1749 North La Brea Avenue, just north of Hollywood Boulevard, in Hollywood. Placing of flowers and floral arrangements starts at 7:30 P.M., and the meeting commences at 8:00 o'clock.

The guest speaker will be Mr. Milo Rowell of Fresno, California, a very widely known and popular Camellia hobbyist, who will speak on "Experiences with Camellias". He has traveled extensively, has a wide background of experience and information, and is a very dynamic speaker. This is a meeting his friends won't want to miss, and it will afford a good opportunity for new camellia people to meet this widely recognized camellia friend and authority.

A CONTINUOUS FERTILIZING PROGRAM

One of the much discussed phases of camellia culture is the fertilizing program. What to use? How frequently to apply? Should one fertilize during the blooming season? Edwards H. Metcalf of San Marino, California has a fertilizing program in operation that may add to present knowledge on the subject.

In January 1964 he tied his fertilizing to his garden watering system so that every time the water runs a minute amount of fertilizer is given to the area or plant being watered. He has an automatic watering system for his garden proper. His container plants, however, are watered by hose. A flow valve, operating on the principle of a gate, controls the flow of the fertilizer solution into the watering system. The flow of water forces the gate open, which action closes electrical contacts that operate a calibrated flow pump that pumps the liquid fertilizer from a tank into the flowing water in the pipes. Thus, whether the automatic system or hand watering is being used, fertilizing takes place with the watering. The quantity of fertilizer solution going into the watering system is regulated by a dial on the proportioning pump.

Prior to starting the program, Mr. Metcalf had soil tests made of his garden and his container plants. Some 36 samples were taken and tested. The only deficiency found in the soil was nitrogen. The container grown plants were about twice as bad as the ground grown plants in nitrogen deficiency. With no background, the proportion of the fertilizer solution (urea) was based largely on guess work. After about ten months of operation he noticed some problems, particularly with azaleas and some camellias. He did not know whether the cause was with fertilizing, watering or weather. So he had more soil tests made and found that the pH had dropped from 6 to 6.3 in the

initial tests to about 4.5, indicating a highly acid condition. The analysis indicated that the nitrogen had turned into nitric acid, thus burning the roots.

The feeding program was stopped for about three months so that watering would leach the soil of the concentration of nitric acid. Soil tests were again made to determine whether the leaching process had been successful. Finding that it had, the continuous fertilizing program was again started but with only one-half as much of the solution as before. The mixture in the tank of solution was the same but the quantity going into the pipes was reduced through the proportioning pump.

Despite the problem of high acidity due to the nitric acid and the ensuing period of leaching, Mr. Metcalf feels that the program has had beneficial results. The general condition of the complete garden (all plantings) has improved, in the appearance of the plants and the health of the foliage. The camellia foliage now has a dark glossy appearance, some with the appearance of having been waxed. Blooms appear to be larger, although this cannot be attributed with certainty to the fertilizing because heavy pruning was followed in 1965.

He believes that the constant feeding has helped against the effects of full sun. He has lost some of the trees that formerly protected camellias, in fact he planted camellias to fill spaces caused by the loss of trees. These plants now generally look healthy after having gone through the past summer. He grows his seedlings in full sun and these plants, the ones that survive, also look better than formerly.

As he states it, there is never a final conclusion in horticulture and he will run annual soil tests in testing laboratories to supplement the con-

(Continued on page 31)

Sharing Experiences

Melvin L. Gum

To the beginner there are two things that are very difficult to adjust to, namely disbudding and pruning. March is the month in Southern California to get "on the ball." There are several reasons for pruning. The two principal ones are, to improve the physical well being of the plant which in turn will produce better blooms, and to shape the plant to give it a more attractive appearance. One must determine the difference between good wood and wood which should be removed to benefit the plant. Old dead wood should be removed. It spoils the appearance of the plant and prevents blooms from developing properly due to lack of space. Cut low branches and interior growth. This eliminates scale breeding areas and enables insecticides to perform their duties more effectively. It is next to impossible to spray a plant if the growth is so thick that the spray cannot penetrate to all parts of the plant. Pest control is closely connected with pruning.

Light and air are a must for the center of the plant. The more leaves that are exposed to the sun on healthy branches, the more efficient the plant will be in manufacturing food. If they do not get light and air, leaves and branches will die. Prune late in the blooming season just as they awaken from dormancy. The cambium is active at this time and cuts heal rapidly. Spindly growth should be cut. Leave two or three growth eyes of the past season, which will be forced to become two or three new branches each bearing blooms.

If you have one and two year old grafts that are growing tall and spindly, this is the time to start to train them. Get rid of the double trunk, if any, pinch off the top growth

bud, and cut back all other unruly branches. The result will be a bushy plant.

While fertilizing is one of the most over done phases of a camellia hobbyist, pruning is the most underdone and neglected. Few plants bear pruning as well as does the camellia. Many gardens are small and if the plants are kept pruned, they can be made to fit smaller spaces and be properly cared for. Many of the best blooms come from small and medium sized plants.

Cutting the blooms is another way to keep the plant trim. On a small plant take only an inch of stem with each bloom, sometimes no stem at all, just twist off the bloom. Then again, to help shape the plant an entire branch may be taken. In an arrangement the entire branch will show the true beauty of the camellia.

When you begin to worry that you have cut away too much, just remind yourself and your wife, or vice versa, that most camellia plants with a good root system will soon replace the removed wood with healthy new growth.

After you have snipped and pinched and are all done, on branches that were larger than a lead pencil paint with "tree size" to prevent drying and decay.

If you have found any scale or disease spray with any good insecticide. Proceed with your fertilizing program, sit back in your easy chair and watch them grow. Hey! don't forget how to water, this rain won't last forever.

A Camellia hobbyist will enjoy many intriguing hours of pleasure as he experiments in the different facets of its culture. My wife and I are meeting some of the nicest people in the world as we travel the camellia road.

CAMELLIA VARIETIES THAT BILL WOODROOF LIKES BEST

Bill Woodroof told members of the Southern California Camellia Society and guests who attended the Society's February meeting that there is no such thing as a "best camellia". Everybody must evaluate camellias for himself according to his own personal preferences for form, color, size and the other elements of camellias that make differences in the preference lists of camellia people. So he told the group which ones he personally likes best on the basis of what he has seen in his own collection, in the collections of others, in the camellia nurseries that he visits frequently, and at the camellia shows that he attends regularly.

He now has 360 varieties of *C. japonica* in his collection, of which 100 have not yet reached sufficient size for him to evaluate them. 1182 varieties were originated in the eleven years 1955 to 1965 — 834 in the South and 348 in California. He has grown 364 of these and has retained 119.

He grouped his favorite camellias into seven groups — white, rose or deep pink, light pink, blush or shell pink, "sweet pea" pink, red, and variegated. Within each group he classified them as semi-double, peony, anemone and formal. Here they are.

WHITE

Semi-double

- ANGEL (irregular)
- CORONATION (regular)
- EMMET BARNES (regular)
- ⊕ FRIZZLE WHITE (irregular)
- LOVELIGHT (regular)
- SILVER RUFFLES (irregular)
- WHITE EMPRESS (irregular)
- WHITE NUN (regular)

Peony

- COLONIAL DAME (loose)
- EDELWEISS (full)
- MRS. HOOPER CONNELL (full)
- ⊕ ONETIA HOLLAND (loose)
- SILVER CHALICE (full)

Anemone

- ⊕ ECCLEFIELD
- SNOW CHAN

Formal

- ALBA PLENA
- FIMBRIATA
- MARGARETE HERTRICH
- PAX

ROSE OR DEEP PINK

Semi-double

- ADA PIEPER (irregular)
- DRAMA GIRL (regular)
- FAITH (regular)
- GRANDEUR (regular)

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HAZEL E. HERRIN
(irregular)
LADY CLARE (regular)
MRS. FREEMAN WEISS
(irregular)

Peony

ELIZABETH LE BEY (loose)
JUDGE MARVIN MANN
(loose)
MARIE BRACEY (full)
SPRING TRIUMPH (loose)
— TOUCHDOWN (full)

Anemone

— DISNEYLAND
— ELEGANS (CHANDLER)
— ELEGANS SUPREME

Formal

PINK PAGODA

LIGHT PINK

Semi-double

— BILLIE McCASKILL
(regular)
— CARA MIA (regular)
— JULIA FRANCE (regular)
WILDWOOD (irregular)

Peony

— DEBUTANTE (full)
FUNNY FACE BETTY
(loose)
— TIFFANY (loose)
— TOMORROW PARK HILL
(loose)

Anemone

— C. M. WILSON

Formal

AVE MARIA
— ELEANOR HAGOOD

BLUSH, ORCHID OR SHELL PINK

Semi-double

COOPER POWERS
(irregular)
— MRS. D. W. DAVIS (regular)

Peony

ALEXIS SMITH (loose)
HAWAII (full)
ONE ALONE (loose)

Anemone

BARBARA WOODROOF

Formal

TWILIGHT

"SWEET PEA" (VARIEGATED) PINK

Semi-double

ANN SOTHERN (irregular)
— ERIN FARMER (irregular)
PARTY DRESS (irregular)
— SPRING SONNET (regular)

Peony

— BALLET DANCER (full)
— CHINA DOLL (loose)
— TOMORROW'S DAWN
(loose)

Anemone

ANNETTE GEHRY

Formal

DOROTHY JAMES (Hybrid)

RED

Semi-double

— ADOLPHE AUDUSSON
(regular)
CLARISE CARLETON
(regular)
— CONQUISTADOR (irregular)
— EDWIN H. FOLK (irregular)
GENERAL LeCLERK
(irregular)
GUILIO NUCCIO (irregular)
JUDGE W. T. RAGLAND
(irregular)
— LADY IN RED (regular)
MATHOTIANA SUPREME
(irregular)
MERCURY (regular)
REG RAGLAND (irregular)
THANKSGIVING (regular)
WARM HEART (regular)

Peony

BETTY ROBINSON (full)
— CLARK HUBBS (full)
— DIXIE KNIGHT (loose)
— KRAMER'S SUPREME (full)
— TOMORROW (loose)

Anemone

— GRAND SLAM
— LAURA WALKER
— R. L. WHEELER

Formal

ALICE WOOD
C. M. HOVEY
— GLEN 40

(Continued on page 32)

A BROADER OUTLOOK FOR CAMELLIAS?

To the Editor:

The other day at a dinner meeting, where a number of new camellia varieties were being displayed, I was amazed to notice that the species *Camellia rosaeiflora* created more excitement than any of the new *C. japonica* varieties. At that time the man sitting next to me commented that it's a shame camellias are so difficult to culture, and wouldn't it be nice if they could be grown as low-maintenance flowering shrubs.

Can the camellia be grown as a low-maintenance landscape plant? Surely, time and care are required to produce show-quality flowers, but what is the future of the camellia as a component in the yard landscape? If the camellia can be used as a garden or landscape plant, should the same well-known varieties be used or should new types be developed? Has too much talk about show-flowers, gibbing and the like discouraged amateurs from growing camellias? Surely, these questions will stimulate different answers from the people who know the camellia.

First of all, among our common shrubs, camellias are among the easiest to grow — certainly they can be grown as easily as junipers and other low-maintenance types of shrubs, with but one limitation — which is sun-burn. Even certain common *japonica* varieties are relatively resistant to leaf-burn from the sunlight. Certain species, such as the *C. sasanqua*, its relatives and possibly some other species, are more sun-tolerant than the common *japonicas*. Many common *japonica*-camellias also are undesirable in the landscape for other reasons — such as the dead flowers hanging on the plant and serious infestations of camellia virus. This would suggest that non-*japonica* camellias and probably hybrids might offer more potential as landscape plants.

If there is enthusiasm about species like *C. rosaeiflora*, should we not explore the values of these types?

Somewhere a field test should be set up to determine the landscape value of camellia types. This test should be carried out in both shade and full sun, Descanso? Articles should be written to inform people how easy it is to grow camellias — these articles should emphasize the ease of culture and the varieties which are the most resistant to neglect. These articles should be written in places where they will catch general attention.

A number of the hybrids which have bloomed in our program have much of the same appeal that is shown by *C. rosaeiflora*. It appears that a number of these floriferous hybrids will be quite vigorous and tolerant of general conditions. Many types of camellias show great potential for general landscape situation, and it is my opinion that this aspect of their culture is neglected in California.

CLIFFORD R. PARKS
Geneticist, Los Angeles
County Arboretum

Dr. Parks will be the speaker at the Southern California Camellia Society's March 8th meeting. As many people know, he is in charge of the program that is centered at the Los Angeles County Arboretum to develop, through planned cross pollination, new features in camellias such as fragrance, new colors and greater cold-hardiness. As so frequently happens, his program is bringing out ideas that were not a part of the project as it was originally conceived. Members who can attend the March 8th meeting will have an opportunity to hear a first-hand report of Dr. Parks' work to date.

EDITOR

SOME HIGHLIGHTS OF OUR HUNT FOR A YELLOW-FLOWERING CAMELLIA*

William S. Stewart

Director, Los Angeles County Arboretum
Arcadia, California

During the past two decades, camellia growers have attempted to either introduce or develop a yellow-flowering Camellia. The late Ralph Peer, past president of the American Camellia Society, spent many years searching for the yellow camellia (1,3). An Australian publication reported that in 1940 a yellow camellia was introduced from Asia to a nursery in England. Here in Southern California, through the sponsorship of the "Camellia Research Committee" and others, efforts have been made to locate an existing specimen of a yellow-flowered camellia and studies are being made in hopes that hybridization will lead to a yellow flower color. However, thus far there has been little hope for a yellow camellia from this work. J. G. Sealy in 1958 (2) reported that there are three wild species of camellia (*Camellia flava*, *C. fleuryi*, *C. tonkinensis*) with yellow petals, native to North Viet Nam.

One of the reasons I was particularly pleased to receive the Fulbright lectureship to India in the fall of 1964 was that it might make it possible to continue the search for a yellow camellia. It is very unlikely that the yellow-flowered native species are confined to North Viet Nam and it had been my thought that they also could be found in some of the botanical gardens and tea plantations in the area in northeast India, approximately north of Burma or further west — possibly even in Assam, India.

You can understand our complete surprise and pleasure when, in October, 1964, while visiting the Royal Botanic Garden in Katmandu, Nepal,

the Curator told us she had a beautiful yellow-flowered *Camellia japonica* growing in the conservatory. The plant she showed us was about 18 inches tall but, unfortunately, not in bloom. She told us it was the color of brass and had been obtained from the Janak Nursery in Darjeeling. Fortunately, our itinerary during this particular Hindu holiday included a 72-hour visit to Darjeeling.

Mrs. Stewart, our 13-year-old daughter Carol, and I arrived in Darjeeling at midnight after a hard day's drive from Patna, the air terminal from Katmandu. The following day we set out to locate the Janak Nursery. The combination of rather vague directions, absence of adequate signs, our inability to read or speak Bengali, made our quest a long and complicated one. It was 5 o'clock in the afternoon before we came to the end of the road and the beginning of the trail which would lead us half a mile down the mountainside to the nursery. At an elevation of 6500 feet we were shrouded by clouds and fog and it was beginning to get dark. So it was with some hesitancy that I started down the trail, leaving Mrs. Stewart and Carol in the car. With barely daylight enough left to see there were camellia plants growing there, I arrived at the nursery, only to find that the caretaker spoke no English. I did manage to learn, however, that the proprietor of the nursery, Mr. Pradhan, lived in Darjeeling.

In the dark I retraced my steps up the mountainside, found the girls safe and sound in the car, and we wound our way back through the beautiful *Cryptomeria* forests to Darjeeling.

The next day took us on the ad-

(Continued on next page)

* Reprinted from the Autumn 1965 issue of LASKA LEAVES, publication of the California Arboretum Foundation, Inc.

venture of locating Mr. Pradhan. This required a bit of doing, but fortunately we found him home and willing to accompany us immediately to his nursery.

We all hiked down the mountain trail I had struggled over the night before, and at the nursery enjoyed a cup of tea while the nurserymen crated ten of the yellow camellias. Mr. Pradhan was very willing to sell these plants to me but warned there would be considerable trouble in exporting them from India. He told me he had obtained the seed in 1957 or 1958 from a Japanese gentleman who had named them "Full Moon," and the Janak Nursery carry them in their catalog under that name. When I asked Mr. Pradhan how yellow the flower color was, he picked a nearby beautiful yellow dahlia. He pointed to the heart of the dahlia and the outer petals and said, "No, it is neither the color of these nor these, but ah, it is the color of these petals here, the middle whorl of the petals of the dahlia flower."

It was truly with a sigh of relief that I saw the porter carrying the plants, well boxed and crated, up the side of the mountain, and to our car.

We left Darjeeling the next day after a rather quick tour of the famous Lloyd's Botanic Garden, and stayed that night in a Hindu hotel in the small town of Siliguri, about 425 from Calcutta. Departing at 4:00 a.m.,

we drove straight through to Calcutta, arriving at midnight, where we found a hotel, and carried our precious plants into the room and soaked them in the bathtub. It took an exasperating three days effort to obtain permission from the Indian Agricultural Authorities of the State of Bengal to ship our plants to Los Angeles. Five of the ten plants purchased were shipped via Pan American Airways in a bareroot condition, the only way it is possible to bring plants into the United States from India. The other five plants were held in India for a subsequent shipment.

There were many problems involved in establishing the plants at the Arboretum, but suffice it to say that as a result of this initial shipment, plus successive shipments, we now have one intact planting growing at the Arboretum, as well as a number of grafted plants. In addition, we have two intact plants growing under the USDA Quarantine Division in Glenn Dale, Maryland. (Ultimately, we were able to arrange to ship bareroot plants directly to the U. S. Plant Introduction Station and to have them held in quarantine with no fumigation.)

We are now confident we do have the "alleged" yellow flowering camellia established in the United States. It will be one or two years until these plants flower and we can answer the question, "Will it be a yellow flower

(Continued on page 31)

STRONG

VIGOROUS

SEEDLING

UNDERSTOCK

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SMOG

Condensation of a report on smog in the Winter 1965 issue of LASCA LEAVES, publication of the California Arboretum Foundation, Inc.

Smog is a word coined in Los Angeles from smoke and fog. In the days before World War II, whenever oil was burned in the citrus groves to keep the temperatures above freezing, a heavy black smoke was created that hung over the city and was carried back and forth by the winds of the ocean and from the desert. When this smoke, largely carbon, was mixed with the frequent fogs, the result was an almost total reduction in visibility.

During the war (1941-1945), new processes were introduced into the refining of gasoline giving rise to compounds which remained after the gasoline was burned in the gasoline engine. Early damage was greatest near the refineries and it became obvious that gases originating here were the principal cause. Meanwhile, improvements in the orchard heaters, making them more efficient burners, almost eliminated their smoke. But when these gasoline derivatives of the "cracking" process accumulated in the air on a foggy day (i.e., when an inversion layer existed), the result was a brownish pall that resembled the smog of previous years. When the emissions from the refineries were brought under partial control, the automobile became the principal source.

This new smog caused eye irritation and lung congestion of varying degrees. On days of severe smog, it also caused severe losses to the vegetable growers and other farmers in the area. It wreaked its greatest havoc, however, for the growers of ornamental crops. Cattleya orchids were so damaged by the "dry sepal disease", eventually traced to smog, that the growers moved virtually *en masse* to the Santa Barbara area.

The damage caused by deleterious gases on vegetation has been observed

and reported throughout the world, especially damage caused by excessive sulfur dioxide. In the Los Angeles area, the symptoms are entirely different than those reported for sulfur dioxide. Prior to their discovery here, such symptoms as silvering, banding and stippling had never been reported. The first observation of any injury was in 1942 when a nurseryman in Temple City found this type of damage on the under surface of the leaves of young petunia plants. The following year a farmer in South El Monte noticed the discoloration of lettuce, endive, and celery, and complaints from the marketing outlets led him to change to other crops which were not affected. In 1944 farmers in and around Dominguez complained about a peculiar type of injury affecting their crops which was investigated by the Citrus Experiment Station in Riverside. By 1949 the annual damage from smog was estimated at \$50,000 by workers at the Citrus Experiment Station, but this figure might have been underestimated since all the forms of injury now known to occur were not recognized at that time. By 1956 the annual damage was estimated at 5 million dollars.

It was observed that plant damage and eye irritation nearly always occurred at the same time, indicating they were probably due to the same or to related substances. The fact that plants showed such unusual symptoms provided an invaluable material for testing the various chemicals suspected. Research projects were set up at the Stanford Research Institute, sponsored by industry, and at the Earhart Research Laboratory at the California Institute of Technology. Tests were conducted under the joint sponsorship of the California Institute

(Continued on next page)

of Technology, the Los Angeles County Air Pollution Control District and the University of California.

Over 50 substances known or suspected of being present in the atmosphere were tested with negative results. At this time, Dr. A. J. Haagen-Smit joined the project and suggested that the damaging material might not be a simple substance, but two or more substances reacting in the atmosphere under the effect of sunlight. Following his suggestion, it was finally determined that unsaturated hydrocarbons coming from cars and refineries would combine with oxides of nitrogen under the influence of sunlight to form a substance which would produce the symptoms observed in the field. This work was later confirmed by the Stanford Research Institute and others.

At this time plant damage and eye irritation were the only means of measuring the actual harmful pollutant. Eye irritation was not reliable, since controlled conditions for measuring it were very difficult to achieve. On the other hand, the amount of damage could be determined on plants raised under carefully controlled conditions and exposed for a single day. Two such projects were set up to pursue this study. The program at the University of California, using pinto beans, was abandoned after one year. The Los Angeles County Air Pollution Control District, using blue grass and petunia (both very sensitive), continued the work for six years from 1954 to 1961. The frequency of severe injury seems to be decreasing; however, the frequency of light injury seems to be on the increase. The regions covered by damage are increasing in most major cities and in areas bordering on metropolitan areas.

When it became apparent that an immediate reduction in plant-damaging air pollution was not probable, a search began for some method of reducing the effects on vegetation. Among the protectants studied were

dusts, sprays and nutrients. In the meantime, similar work had been started at the Los Angeles State and County Arboretum under a Public Health grant. In charge of this work is Wilfred M. Noble, presently associated with the Arboretum and with the U. S. Department of Health, Education and Welfare. The first results of this project at the Arboretum were published in 1963 and showed that reduced glutathione was effective in alleviating the effects of natural air pollution. Subsequent studies showed that gum guaiac was an effective material for removing from the air both naturally occurring air pollution and ozone alone. Recent experiments have shown that gum guaiac dusted directly on leaves will protect the plants from heavy ozone concentrations. One leaf of a pair of primary leaves of a pinto bean was dusted with the gum and the plant exposed several hours to a high concentration of ozone. The undusted leaf was severely injured while the dusted leaf showed only slight damage. In another experiment, using *Nicotiana glutinosa*, one half of each leaf was dusted with the gum and the plant then exposed to a high concentration of ozone. The undusted leaves were severely damaged while the dusted halves showed little to no injury, depending on the leaf age. Presently in progress are studies using lower concentrations of both ozone and propyl gallate. White Cascade petunia, found to be one of the most sensitive plants so far observed, will be used.

Smog, the term commonly used to refer to air pollution, technically applies to smoke and fog as presently found in London where it is still a critical problem. Used in this sense, the term applies to the atmospheric conditions in only a few areas at the present time. The serious air pollution in the Los Angeles area, and being discovered in many other areas, is neither smoke or fog. One of its chief characteristics is its high ozone con-

centration and the resulting strong oxidizing ability. It cracks rubber, causes eye irritation and damages plants in a very specific manner. After years of careful study, some of the components of this pollution have been sorted out. Plants are most sensitive when young. Petunias are more sensitive in the 4 to 7 leaf stage than at any other time. Small seedling pansies are quite sensitive, but plants in the flowering stage are rarely injured. Therefore any lists of resistant plants are actually relative to the state of growth. The following paragraphs discuss the more important components of this pollution, their effects on vegetation, and list a number of sensitive and resistant plants.

The term *pan* refers in general to a group of compounds belonging to the chemical family of peroxyacylnitrates or more specifically to one member of the group, peroxyacetyl nitrate. This compound and others related to it have been shown to produce the major symptoms observed on days of high pollution when plant damage occurs. These symptoms are as follows:

Silvering: This occurs on the lower surface of the leaves of plants such as spinach, chard, beets, petunia and snapdragon. It varies in expression from a silvery appearance on spinach to a bronze on table beet and a milky white on snapdragon. Small plants and young leaves are most sensitive.

Banding: Found on most sensitive plants, banding is probably the most common symptom. Because cells of young leaves at one brief stage of growth are far more sensitive than at any other time, and since most leaves mature progressively, successive bands across the leaves are produced by smog each day it occurs. It is apparent on mimulus, fuchsia, petunia and snapdragon.

Growth reduction: This is a very serious, though less obvious symptom, since to observe it plants must also grow in smog-free air for comparison.

As much as 90% reduction in growth has been noted over a period of several months on some young plants grown in ordinary air compared to identical plants grown in filtered air for the same length of time.

Cellular collapse: This, of course, can be observed only with a microscope. Cells in the interior of the leaf surrounding the stomats collapse and dehydrate without disconnecting from each other and the space which they occupied becomes filled with air.

The following is a list of some of the more sensitive and resistant ornamentals to the *pan* type of damage.

Sensitive: petunia, mimulus, snapdragon, primrose, aster, sweet basil, fuchsia, impatiens, mint and ranunculus.

Resistant: trees, woody shrubs, cactaceae, anthurium, bromiliad, calendula, camellia, carnation, orchids, coleus, cyclamen, ivy, narcissus, lily, portulaca, most house plants.

Ozone, like *pan*, is a product of the hydrocarbon-nitrogen oxide reaction in the sunlight. More ozone damage is being observed than was first suspected. This could be due to an increase in the amount of injury, a better knowledge of its symptoms or both. In higher concentrations it sometimes causes injury similar in some ways to that caused by *pan*. However, this is not usual and may be distinguished easily by a careful observer. The chief distinction of ozone injury is that it primarily attacks the lower leaves and particularly affects woody plants. In contrast to *pan*, which attacks the lower leaf surface, ozone affects the palisade layer of the upper surface, causing small clusters of cells to darken and eventually turn brown-black. Leaves thus affected turn yellow and drop prematurely. Some of the common plants affected by ozone are: alder, azalea, buttonwood, carob, elm, flowering maple, hibiscus, fibrous begonia, maple-leaf mulberry, orchid tree, sage, walnut, avocado,

(Continued on next page)

box elder, California allspice, nicotiana, chrysanthemum, fig, fuchsia, locust, maple (silver), pepper tree, sycamore, willow and morning glory.

Ethylene is a simple, unreacted hydrocarbon of lower molecular weight and, unlike *pan* and *ozone*, is not easily removed by carbon filters. Ethylene injury has been known for many years but only two plants have shown serious symptoms: orchids and carnations. One of the few pollutants which affects the blossom, this gas causes what is known as dry sepal on orchids. The sepals age prematurely and, in severe cases, even turn brown before the bud opens. Losses to orchid growers are quite severe and many have left the area or have moved in from the coastal areas where injury is most severe. Ethylene is one of the major problems in the San Francisco region where many orchids are grown. Injury to carnations is not very common. It is strange, however. The opened blossom reverts back to a bud, an effect called "sleepiness".

Hydrogen fluoride damage is less common in the Los Angeles basin than in many other industrial areas since few major industries here produce this pollutant. However, a number of ceramic plants cause local injury to vegetation. Fluoride gases are released when clays and frits are heated to high temperatures. They cause a cocoa brown discoloration with well defined borders in the tips and edges of the leaves. Very low concentrations

over an extended period of time are capable of causing severe damage. Damage has been observed in Southern California on the following: gladiola, Monterey pine, elm, viburnum, ficus, pear, apricot, peach, tomato, sunflower, yucca, iris, magnolia, rose, papyrus, mahoberberis, strawberry, grape, eucalyptus, bottle brush.

Sulfur dioxide concentrations in the Los Angeles area are low for a large industrial center and normally occur only in case of an accident in an industrial plant where this gas is used. Acute injury appears as a tan to paper white area between the veins, with most severe symptoms appearing on the younger leaves.

Damage to plants from air pollution in the Los Angeles area has been well investigated and the symptoms described. The sources of the materials causing the injury have been determined. Controls have been placed on these sources or are being planned for them, as in the case of automobiles. But to control does not mean to eliminate. Plants are often more sensitive than people, so that an atmosphere which might satisfy the public could still be plant damaging. Investigation should be continued along at least three lines: First, since it has been observed that plants vary considerably in their sensitivity, even in the same species, attempts should be made to develop resistant strains. Second, the search should continue

(Continued on page 31)

MARSHALL'S CAMELLIA NURSERY

(AT THE SIGN OF THE CAMELLIA)

RETAIL

WHOLESALE

Camellias — Azaleas — Rhododendrons

CAMELLIA and AZALEA LIST on request

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Camellias and Air Pollution

Injury to vegetation in general in the Los Angeles area is caused by two pollutants each of which has specific symptoms. One of these pollutants is ozone, which produces a brown-black speckling on the upper surface of leaves followed usually by a yellowing of the surrounding leaf surface and abscission. The other pollutant, of the per oxy acylnitrate group, produces a band of damage affecting the most recently matured cells. It is also most damaging to the spongy mesophyll where there is considerable space between the cells. It often causes a silvery appearance on the lower surface of the leaf. A more complete description of these types of injury may be found in *Lasca Leaves*, Volume XV, No. 1, on pages 7-12. This publication is available at the office of the California Arboretum Foundation, Incorporated.

Up to the present time none of these symptoms has been observed on camellias. They are, therefore, considered to be quite resistant to the type of pollution common in the Los Angeles basin.

—Wilfred M. Noble
Research Associate in
Air Pollution
Los Angeles County
Arboretum

October 22, 1965

SMOG (*Continued*)

for more satisfactory methods of protecting plants by means of sprays, dusts or nutrition. Third, the removal of some of the pollutants from the atmosphere will effect the overall composition of the smog; therefore, careful observations should be continued by trained observers to be sure that other forms of injurious gases do not occur. This is obvious when one considers that ozone damage has been

quite heavy on the tobacco crops in the eastern states, and orchid growers in the San Francisco Bay area have been very seriously affected by ethylene.

CONTINUOUS (*Continued*)

conclusions that he reaches through his personal observations. He also looks forward to the possibility of using the system for controls such as against flower blight fungae or for general insecticide control when a satisfactory systemic insecticide is developed.

He suggests that anybody who considers such a system as he uses should make certain that the fertilizer solution in the pipes is independent of the household water supply. This can be done either by having the point of induction of the fertilizer after the household water is taken off or by having a separate garden watering system. The source of water for a swimming pool should also be considered. Finally, one should look into state and city regulations covering auto-cyphoning and trap devices which would be placed between the water supply and the point of injection of the fertilizer solution.

SOME HIGHLIGHTS (*Continued*)

under our growing conditions?"

If *Camellia japonica* "Full Moon" does as well for us here in Southern California as it does in Nepal and Darjeeling, it will truly be a wonderful addition to our horticulture and you will hear a joyous shout from the Arboretum!

LITERATURE CITED

- (1) Peer-Morris, Monique. 1965. "Yellow Camellia" *Horticulture*, 43 (7); 33, 39.
- (2) Sealy, John. 1958. "A Revision of the genus *Camellia*." Royal Hort. Soc., London. 239 pp.
- (3) "More About Yellow Camellias", *Camellia Journal*, 20(3); pp. 23, July, 1965.

Northern California Societies Meet

Seventy-seven members of camellia societies of Northern California attended the second annual dinner of representatives of these societies at Modesto on Friday, February 4th. All of the Northern California societies were represented, as well as Alton Parker of Sebastopol who invited people to participate in the new show that will be held this year at Sebastopol.

As usual, camellia blooms accompanied the people to the dinner meeting. The trophy for the best *C. japonica* was won by Clyde Buchanan of Modesto with an 'Angel'. M. W. Abramson of Tulare had the best gibbed bloom with a 'Tomorrow'. M. B. Talia of Santa Clara had the best reticulata.

WOODROOF (Continued)

VARIEGATED

Semi-double

- ADOLPHE AUDUSSON
(regular)
- BETTY SHEFFIELD
SUPREME (irregular)
- CLARISE CARLETON
(regular)
- DONCKELARII (regular)
- EUGENE LIZE (irregular)
- GUILIO NUCCIO (irregular)
- MARYLAND (irregular)
- MERCURY (regular)
- MRS. FREEMAN WEISS
(irregular)
- REG RAGLAND (irregular)
- VILLE de NANTES
(irregular)

Peony

- CARTER'S SUNBURST (full)
- DAIKAGURA (loose)
- DR. JOHN D. BELL (loose)
- GIGANTEA (loose)
- LAWRENCE WALKER
(loose)
- MARIE BRACEY (full)

Anemone

- ELEGANS (CHANDLER)
- EXTRAVAGANZA
- ▷ R. L. WHEELER
- ▷ SHIRO CHAN
- Formal
- ELEANOR HAGOOD
- GLEN 40
- ▷ LALLAROOK

Temple City Camellia Society

The next meeting of the Society will be held on Thursday evening, March 24th, in the Lecture Hall of the Los Angeles County Arboretum at 8:00 P.M.

The highlight of the evening will be the showing of colored slides from the American Camellia Society Library. As yet, we do not know what camellia flowers will be depicted by these slides, but hope that they will feature the best of the old as well as the new introductions from the South.

Flowers will be placed on the display tables from 7:30 to 8:00 P.M.

All are cordially invited to attend this meeting.

NOMENCLATURE (Continued)

tration should not be accepted by the American Camellia Society of new varieties where descriptions are based on blooms that have been gibbed, and the registration form that is accepted should clearly state that gib has not been a factor in the description. These steps will hold to a minimum future cases such as are now causing trouble.

As stated at the beginning of this article, the responsibility for correct descriptions in CAMELLIA NOMENCLATURE rests with the people who in effect write their own descriptions in the information they submit with their registrations of new varieties. The "Very Large" group only illustrates a very bad situation that, if not corrected, can reduce the authority of CAMELLIA NOMENCLATURE.

Directory of Affiliated Societies

- Camellia Society of Kern County.....Bakersfield
 President: Walter Stiern.
 Secretary: Melvin G. Canfield, 2709 Scott Dr., Bakersfield.
 Meetings held 2nd Monday of the month, October through April, in Police Building, 1620 Truxton Ave., Bakersfield.
- Camellia Society of Orange County.....Santa Ana
 President: Paul M. McClelland.
 Secretary: Mrs. George T. Butler, 1121 Orange, Santa Ana 92701
 Meetings held first Thursday of month, October through April, in Orange County Farm Bureau Building, 1916 W. Chapman. Orange.
- Central California Camellia Society.....Fresno
 President: Kenneth E. Thompson.
 Secretary: Mrs. Glenn S. Wise, 5493 E. Liberty, Fresno.
 Meetings held at Heaton School, Del Mar Ave., Fresno on Nov. 17, Dec. 15, Jan. 26, Feb. 23, Mar. 23.
- Huntington Camellia Garden.....San Marino
 Henry E. Huntington Library and Art Gallery, Oxford Road, San Marino.
- Pomona Valley Camellia Society.....Pomona
 President: I. John Movich, 932 N. Park Ave., Pomona.
 Secretary: Nelson R. Gatov, 552 N. Park Ave., Pomona, 91767.
 Meetings held 2nd Thursday of each month, November through April, in the Pomona First Federal Savings & Loan Assn. Bldg., Garey Ave. & Center St. Pomona (1 block South of Holt).
- San Diego Camellia Society.....San Diego
 President: Ray Greer.
 Secretary: Lewis Greenleaf, 4389 Copeland Ave., San Diego 5, Calif.
 Meetings held in Floral Association Building, Balboa Park, San Diego, Nov. 12, Dec. 10, Jan. 14, Feb. 4, Mar. 11, April 8, May 13 (dinner).
- Southern California Camellia Society.....San Marino
 President: Alvin L. Gunn.
 Secretary: Harold E. Dryden, 820 Winston Ave., San Marino.
 Meetings held Second Tuesday of every month, November to April, inclusive at the San Marino Women's Club House, 1800 Huntington Drive, San Marino.
- Temple City Camellia Society.....Temple City
 President: Basil J. Neptune.
 Secretary: Mrs. Violet Shuey, 5813 N. Golden West Ave., Temple City.
 Meetings held on 3rd Friday of November and December and 4th Thursday January through March in Lecture Hall of Los Angeles County Arboretum.
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