

THE *Camellia*
REVIEW

A Publication of the Southern California Camellia Society



C. JAPONICA 'ED COMBATALADE' *Courtesy of Kramer Bros. Nursery*

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Southern California Camellia Society Inc.

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

The Society holds open meetings on the Second Tuesday of every month, November to April, inclusive at the San Marino Women's Club House, 1800 Huntington Drive, San Marino. A cut-camellia blossom exhibit at 7:30 o'clock regularly precedes the program which starts at 8:00.

Application for membership may be made by letter to the Secretary. Annual dues, \$10.00

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THOUGHTS

from the editor

By the time anyone reads this, the 1977-1978 Camellia Show season will be over. From the opening salvo of the Fresno Camellia-Rama on November 5, 1977 to the wind-up at Santa Rosa on April 1, 2 and 3, 1978 the Shows have been the life blood of the hobby.

This year marked the inauguration of the new South Coast Camellia Society Show. What a success that turned out to be! 1420 blooms and an attendance of over 2000! Also there was a very successful flower arrangement show as a companion attraction. (See article, page 22). The South Coast Camellia Society should be given a lot of credit for staging their first show. I can recall that there was considerable consternation and misgiving when South Coast announced they were going to hold a show. Here was a newly formed society with only something over 20 families in its membership, proposing to hold a full-fledged camellia show! Well, starting from scratch they staged one of the best shows of the season and I dare say, every one is already looking forward toward their next endeavor. The date of January 27th and 28th, 1979 has been set for their Second Annual Show.

While I am not as much of a "show buff" as some of the other hobbyists are, I guess I won't be satisfied until we have some kind of a flower display EVERY week-end from January until May!

This past year Fritz Kahen and some of the Orange County Camellia Society members held a Camellia Flower Display on February 4th and 5th in Orange County. Would there be any merit in getting behind this idea and having the Flower Display at one of the larger nurseries in Orange County? We could have blooms displayed on large tables and only award ribbons for the winning blooms. There would be no silver or crystal to guard—just a flower display with 1st, 2nd, and 3rd ribbons and an honor bloom table. It would be a chance to catch the interest of people who do not normally see our regular shows. The South Coast Camellia Society Show has demonstrated that there are plenty of blooms and considerable interest in camellias in late January. Why not show our blooms to the 3,000,000 people in Orange County!

INTRODUCING IN 1977-78

NUCCIO'S PEARL MAUI

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CAMELLIA GIANTS OF THE PAST

DAVID COLEMAN STROTHER—1881-1970

By JOSEPH H. PYRON

No camellia enthusiast contributed more to camellia lore and culture than the late Dave Strother. Southern born and bred, he was a native of Edgefield County, South Carolina. He had grown up with camellias in his mother's garden, taking them for granted, for few gardens in the Deep South were without one or more camellias.

He was a graduate of Wofford College in Spartanburg, S.C. His father purchased a cotton seed oil mill business for him in Fort Valley, Georgia in 1903. "Mr. Dave," as he was known, soon became a successful business man, expanding into peach farming, a large fertilizer business and other investments.

He became interested in camellias quite by accident. He had long admired the street and private garden plantings of camellias in the quaint neighboring town of Marshallville, three miles from his Masee Lane peach farm. The late John Donald Wade and Claud Frederick financed the planting of camellias and crepe myrtles for several miles along Highway 49 passing through Marshallville south to Montezuma and north to Fort Valley.

In 1936 when a windstorm destroyed his peach crop, a packing shed, killed a negro farm hand and blew over a large pecan tree in front of his overseer's house at Masee Lane Farm, he thought it a great disaster. However, it started a man on the fascinating hobby of collecting and growing camellias. His hobby touched and enriched the lives of thousands of people throughout America and beyond. He replaced the pecan tree with a red camellia such as he had admired in Marshallville. This variety was later identified as 'Mathotiana.'

Mr. Dave soon became interested in planting other varieties. By de-

grees the garden was expanded into seven acres. No one has ever counted the number of varieties or plants. He designed the well laid out garden himself and soon had four greenhouses.

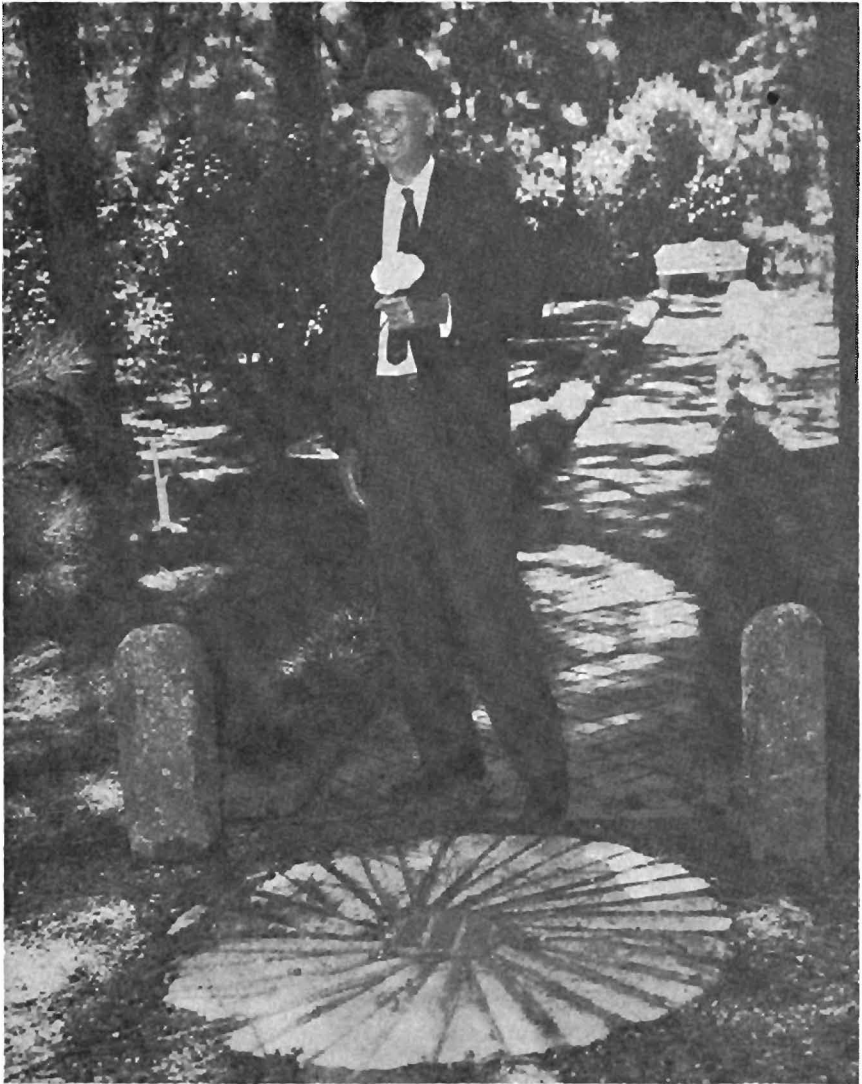
He visited most camellia shows, gardens and nurseries throughout the South, also West Coast growers and shows. The Southern California Camellia Society predated the ACS by several years. (1939).

The late Jeff Smith of McRae, Georgia was one of the early collectors, importing many varieties and buying truck loads from Fruitland Nursery in Augusta, McIlhenny in Avery Island, Louisiana and elsewhere. Jeff exchanged scions with Mr. Dave, Judge Solomon of Savannah, Norwood Hastie of Magnolia Gardens, Robert O. Rubel of Mobile, Dr. Harold Hume and many others were early sources of varieties and information. He carried on a voluminous correspondence with growers everywhere.

No one did more to disseminate camellia varieties and cultural "know how" than Mr. Strother. His background in fertilizers led him to develop formulas especially suited for camellias. He used cotton seed meal as an organic source of nitrogen. This ingredient has since become scarce and very expensive.

One of his special interests was in camellia nomenclature. He found he was duplicating many varieties due to use of local names. 'Mathotiana,' 'Nagasaki' and others were being listed under as many as eight or ten different names.

Mr. Strother, accompanied by his friend and business associate Maxwell Murray, travelled thousands of miles every season visiting camellia people and following up leads on new or little known varieties. All of this



Dave Strother

was done as a hobby for he never sold a plant, scion or flower. He gave freely of his time and advice to all who sought information, yet he rarely spoke in public nor wrote articles. He once said of someone who had written several articles filled with misinformation, "If he knew more he would write less."

Mr. Dave, Dr. Hume, Jeff Smith, Judge Solomon and others in discus-

sing the nomenclature confusion saw the need for study and some organized exchange of information. After the show in Savannah in 1945, Jeff Smith suggested that those interested get together and discuss the formation of a truly national camellia organization. Judge Solomon arranged a dinner at the General Oglethorpe Hotel (now the Savannah Inn). Mr. Dave and Jeff Smith were appointed

to contact all known camelliaphiles, including those on the West Coast. One hundred and eleven letters were sent out. The organizational meeting was held at the Dempsey Hotel in Macon on September 29, 1945 with Mr. Strother presiding. Forty-three attended. Dr. H. Harold Hume was elected president, T. Jeff Smith, treasurer and Mr. Strother as one of the Directors-at-Large. A Charter and By-Laws were drawn up and submitted to Circuit Judge John A. H. Murphee, Gainesville, Florida. Gainesville was designated as headquarters.

Mr. Strother was very discriminating in selecting varieties for his garden. If a variety did not prove satisfactory it was soon used as understock. He made no attempt to have every variety. His all time favorite was 'Ville de Nantes' as attested by the 25 or 30 specimens at Masee Lane. Other favorites were 'Clarice Carlton,' 'Alba Plena' which he said was the perfect Camellia, 'Betty Sheffield Supreme,' 'Elegans' and its

sports, 'Carter's Sunburst' and sports, 'Guilio Nuccio' the 'Tomorrows,' 'R. L. Wheeler,' 'Diddy Mealing,' the Higos, miniatures and the new hybrids.

In 1966 Mr. Dave gave ACS his Masee Lane Camellia Garden, together with 160 acres of surrounding farm land. He was the largest benefactor of the Endowment Fund. He donated \$50,000.00 during his lifetime and the first item in his will was an additional \$50,000.00. Also from the time in 1966 when he deeded the Masee Lane property to ACS until January 1969 he assumed all expenses of maintenance of the gardens which amounted to \$8,000.00 to \$10,000.00 per year.

The perpetuation of Masee Lane was uppermost in his thoughts. His great interest inspired others to make liberal donations.

"When Dave Strother passed away he had already realized his dream of making the world more beautiful for having lived in it," wrote his friends Elizabeth and Frank Dowd of Charlotte.

OAK ROOT ROT DISEASE AND POSSIBLE MEANS OF CONTROL

By P. C. CHEO and JAMES E. DOTY

Ed. Note: This article is reprinted from the March 1974 issue of Lasca Leaves. Oak Root Rot is one of the few threats to camellia culture.

Armillaria mellea, the oak root rot fungus, is one of the most common root rot diseases of ornamental plants and orchard trees in Southern California. The reason it is so common is partly due to the warm soil conditions and irrigation water we have throughout the year that encourage its continuous growth. Basically, *Armillaria* is a saprophyte capable of flourishing in soil for many years on dead stumps, roots, and other organic matter thereby perpetuating the state of infection to living roots. As a parasite, it is a disease of about 700 species of woody plants and some herbaceous

plants reported from all parts of the world.

Most of our ornamental shrubs and trees are highly susceptible to root rot, such as roses, hollies, azaleas, privets, lilac, flowering peaches, figs, camellias, and, of course, oaks, pines, willows, citrus, and many others. Among herbaceous plants we found heavy infection on strawberry, potentilla, jade plant, geranium, and ginger. *Armillaria* is a white-rot organism having the power to break down lignin and cellulose. It attacks living and dead substrates readily if they contain sufficient quantities of starch or simple carbohydrates to give it a start. If it is well established on a decaying stump or tree it may spread far, destroying litter and fallen or

standing timber as well as living hosts.

There are reports that *Armillaria* also is a mycorrhizal fungus on a few species of tropical saprophytic orchids, such as *Gastrodia elata* and *Galeola septentrionalis*. As mycorrhizal fungus, its infection benefits host plants by supplying them with needed nutrients. The growth cycles of these orchids can only be completed in nature with the help of infection by *Armillaria*. Uninfected tubers will not form flowers. The fungus first parasitizes the dormant tuber and later is kept in control by digestion as the growth of the flower shoot proceeds. *Armillaria* is capable of digesting complex organic compounds, and the orchids can then in turn derive their nutrition from the fungus. Therefore, *Armillaria*, as a saprophyte and symbiont is one of the important members of the soil flora in tropical and temperate climates in maintaining the balance of nature. The parasitic activity of this fungus could be a result of human plantation and cultivation which had introduced genetic changes of both plant and fungus within local areas in a sudden way.

Armillaria infection is cosmopolitan. In the case of the oak tree, from which the fungus is first isolated and studied, few trees in these areas are completely free from its infection. Natural infection, however, will not threaten the life of native oak trees. A few roots may be infected, but the tree is able to replace these with new growth. This balance can be maintained throughout the life span of the tree without serious damaging effects, unless the balance is tipped in favor of the growth of the fungus and unfavorable to the growth of roots. Surface watering of surrounding lawns and shrubs during the warm summer months softens the main roots and root-crown area, and this condition favors the progress of the fungus. The death of many oak trees in this area results mainly from the weakening of the anchor roots by *Armillaria*

infection. In this condition, rain or wind storms can cause infected trees to fall. When examining them, many healthy roots can be found, and it is clear that these trees could be able to survive for many years if the anchor roots had not been weakened. Our famous Tarzan tree (*Quercus agrifolia*) in the Australian section of the Arboretum was topped down during a wind storm in the fall of 1969. The tree had good foliage display that year, and if it had not been for the weakening of one of the anchor roots, the Tarzan tree could have lived for many more years. The tall sycamore tree (*Platanus racemosa*) in front of the Queen Anne Cottage suffered the same fate a few years later. Many smaller flowering trees or shrubs, especially grown close to the lawn area where constant watering is needed during summer months, may totally collapse due to girdling of the crown or main trunk area by *Armillaria* infection. The fungus invades and destroys the cambium area between the bark and wood, therefore, when completely girdled it chokes off the connection between branches and roots. *Armillaria* infection sometimes can be traced in the trunk area 8 to 10 inches above the ground level.

Plants that are in vigorous condition as a result of favorable climatic conditions and sound cultural practices, usually demonstrate high degrees of resistance to this disease. Otherwise, under conditions that are unfavorable to the growth of a plant or under a stress condition, they may succumb to the infection. The physiological condition of a tree may be the predisposing factor for *Armillaria* infection and development. The chemical content in roots, especially the reducing sugars, fatty acids, some amino acids and even growth hormones, are important factors in relation to root infection by *Armillaria*. Therefore, plants grown under different conditions, vary in their resistance to *Armillaria*. In locations where they

are growing under conditions to which they have adapted and which are culturally optimum, they are generally healthy and resistant to *Armillaria* infection. So far no definite report has been made concerning immunity in plants against *Armillaria* infection.

Plant resistance to *Armillaria* infection is further complicated by the occurrence of many physiological strains of the fungus. These strains not only differ in their growth patterns when cultured on artificial media, they also differ in pathogenicity with different hosts. Therefore, depending on the presence of different strains involved in an infection, the severity of the disease may vary. One species of plant may be relatively resistant to strain A, but not to strain B. The predominance of different strains in different geographic areas will affect the relative resistance of plants in that area. Some plants may be resistant when grown in one area and susceptible when grown in another area. This may be due to either growth conditions of plants, or the difference in the predominant strains of *Armillaria* in that area, or both.

Practical control of *Armillaria* root rot disease can be attained with proper cultural practice. The method of soil fumigation will not be discussed here. Soil fumigation with methyl bromide is effective in a large-scale operation, but it is expensive and is not recommended for home gardens, street plantings, or already infected trees. A valuable tree can be saved if its trunk and anchor roots can be protected from extensive infection. With good fertilization programs to keep up the vigor of the tree, these infected trees can live to their normal age. Exposing the anchor roots in the immediate area of the trunk for a circumference of one yard to air-dried conditions during the summer months is highly recommended for oaks and other susceptible trees. Deep watering is recommended when wat-

ering is needed. Surface watering, especially the wetting of the trunk and anchor roots area should be avoided.

An effort has been made at the Arboretum to find chemicals that are specifically effective in inhibiting the growth of *Armillaria* and which can then be applied to exposed areas for further protection. Many systemic chemicals that can be translocated by plants have been tried in our laboratory. Of 20 chemicals tested, three were highly effective, showing strong inhibitory effects to the growth of *Armillaria* at or below the 50 ppm level. These three effective chemicals are: (1) Actidione (cycloheximide), an established fungicide, (2) Diuron (3-(3,4-Dichlorophenyl) - 1,1-dimethylurea), a herbicide, and (3) 2,4-dichlorophenoxyacetonitrile, a new chemical closely related to 2,4-D.

At present, actidione is being studied at the Arboretum for practical applications in the field. The active ingredient in actidione is cycloheximide, a potent inhibitor in protein synthesis. Cycloheximide completely inhibits the growth of *Armillaria* at concentrations of 25 ppm in culture medium tests. Strong inhibition still exists at a concentration of 10 ppm. A solution at a strength of 200 to 300 ppm of cycloheximide can be applied to oak trees without harmful effects.

A new pressure injector has been developed by the Elm Research Institute, Waldwick, New Jersey, for the control of Dutch Elm disease. This Model 102 pressure injector provides a fast, easy and effective means of injecting the fungicide into trees. It is hoped that by injecting cycloheximide into the crown and anchor root areas, further fungus activity in that area can be stopped and the tree can be saved from further damage by this disease. Experiments with cycloheximide applications will be carried out at Descanso Gardens. The results can then be analyzed for the effectiveness of the application.

SHOW RESULTS

SOUTH COAST CAMELLIA SOCIETY

FIRST ANNUAL SHOW—JANUARY 28-29, 1978

- BEST TREATED LARGE JAPONICA**
'Mark Allen Var.'—Mr. and Mrs. Jack Woo
Runner-up—'Lady In Red'—Mr. and Mrs. Al Taylor
- BEST TREATED MEDIUM JAPONICA**
'Nuccio's Pearl'—Mr. and Mrs. Jack Woo
Runner-up—'Eleanor Martin Supreme'—Mr. and Mrs. Grady Perigan
- BEST NON-TREATED LARGE JAPONICA**
'Swan Lake'—Rudy Moore
Runner-up—'White Nun'—June Renz
- BEST NON-TREATED MEDIUM JAPONICA**
'Eleanor Martin Supreme'—Mr. and Mrs. Milt Schmidt
Runner-up—'Sawada's Dream'—Dr. and Mrs. R. Stiern
- BEST TREATED SMALL JAPONICA**
'Ava Marie'—Rudy Moore
Runner-up—'Kuro Tsubaki'—Mr. and Mrs. Harold Rowe
- BEST TREATED MINIATURE & SMALL NON-RETIC HYBRID**
'Spring Festival'—Mr. and Mrs. Jack Woo
- BEST NON-TREATED MINIATURE JAPONICA**
'Firecone Var.'—Mr. and Mrs. Grady Perigan
Runner-up—'Little Slam'—Tom Hughes
- BEST NON-TREATED SMALL JAPONICA**
'Ava Maria'—Rudy Moore
Runner-up—'Splash of White'—Mr. and Mrs. Sergio Bracci
- BEST NON-TREATED LARGE RETICULATA**
'Arch of Triumph'—Mr. and Mrs. Pat Novak
Runner-up—'Dr Clifford Parks'—Mr. and Mrs. Sheldon Lewis
- BEST TREATED LARGE RETICULATA**
'Valley Knudsen'—Mr. and Mrs. Jack Woo
Runner-up—'Pharaoh'—Mr. and Mrs. Sergio Bracci
- BEST TREATED LARGE NON-RETIC HYBRID**
'Sylvia May Wells'—Mr. and Mrs. Al Taylor
Runner-up—'Elsie Jury'—Mrs. Wilbur Foss
- BEST TREATED MEDIUM NON-RETIC HYBRID**
'South Seas'—Mr. and Mrs. Phil Sims
- BEST NON-TREATED, NON-RETIC HYBRID**
'Elsie Jury'—Rudy Moore
- BEST MEDIUM NON-RETIC HYBRID**
'Angel Wings'—Mr. and Mrs. D. T. Gray
Runner-up—'Rose Parade'—Dan Dawson
- BEST NON-TREATED SPECIES**
'Bonanza'—Bill Donnan
- BEST SEEDLING**
'Variety No. 3'—Mr. and Mrs. Lee Gaeta
- BEST NOVICE BLOOM**
'China Lady'—Mr. and Mrs. S. Cusson
Runner-up—'Pink Perfection'—Ralph Floto
- BEST TRAY OF THREE TREATED JAPONICAS**
'Tomorrow Park Hill'—Mr. and Mrs. Jack Woo
- BEST TRAY OF THREE TREATED RETICULATAS**
'Francie L.'—Mr. and Mrs. Sergio Bracci
- BEST TRAY OF THREE MINIATURE & SMALL TREATED JAPONICAS**
'Maroon and Gold'—Mr. and Mrs. Grady Perigan
- BEST TRAY OF THREE NON-RETIC HYBRIDS**
'Freedom Bell'—Mr. and Mrs. Sergio Bracci
- BEST TRAY OF THREE JAPONICAS**
'Sawada's Dream'—Dr. and Mrs. R. Stiern
- BEST TRAY OF THREE RETICULATAS**
'Francie L.'—Mr. and Mrs. Harry Putnam
- BEST TRAY OF THREE MINATURE & SMALL JAPONICAS**
'Pink Perfection'—Mr. and Mrs. Milt Schmidt
- BEST TRAY OF THREE NON-RETIC HYBRIDS**
'Garden Glory'—Mr. and Mrs. Jack Woo

COURT OF HONOR

'Grand Slam'—Walter Harmsen
'Gullio Nuccio'—Mr. and Mrs. Lee Gaeta
'Elegans Champagne'—Mr. and Mrs. Sergio Bracci
'Grand Prix'—Mr. and Mrs. Al Taylor
'Easter Morn'—Mr. and Mrs. Jack Woo
'Elegans Splendor'—Tom Hughes
'Vulcan'—Mr. and Mrs. Al Taylor
'Betty Sheffield'—Mr. and Mrs. Al Taylor
'In The Red'—Mr. and Mrs. Jack Woo
'China Doll'—Mr. and Mrs. Wilbur Ray
'Alta Gavin'—Mr. and Mrs. Al Taylor
'Miss Tulare Var.'—Mr. and Mrs. Jack Woo
'Howard Asper'—Mr. and Mrs. Bob Jaacks
'Royalty'—Mr. and Mrs. Grady Perigan
'Tom Knudsen'—Mr. and Mrs. Leland Chow
'Elegans Supreme'—Mr. and Mrs. Milt Schmidt
'Alta Gavin'—Mr. and Mrs. Al Taylor
'Grand Slam'—Mr. and Mrs. W. E. Goertz

BLOOM COUNT—1420

ATTENDANCE 2050

SAN DIEGO CAMELLIA SOCIETY

THIRTY-FIRST ANNUAL CAMELLIA SHOW—FEBRUARY 11-12, 1978

BEST LARGE JAPONICA

'Premier Var.'—Mr. and Mrs. Harry Humphrey
Runner-up—'Grand Prix'—Harold Dryden

BEST MEDIUM JAPONICA

'Nuccio's Pearl'—Mr. and Mrs. Grady Perigan
Runner-up—'Glen 40 Special'—Ron Braid

BEST SMALL JAPONICA

'Tom Thumb'—Rudy Moore
Runner-up—'Grace Albritten'—Mr. and Mrs. Sergio Bracci

BEST MINIATURE

'Fircone Var.'—Mr. and Mrs. Sergio Bracci
Runner-up—'Kewpie Doll'—Mr. and Mrs. Harold Rowe

BEST RETIC HYBRID

'Mouchange'—Dr. and Mrs. Fred Mowrey
Runner-up—'Valentine's Day'—Caryll Pitkin

BEST NON-RETIC HYBRID

'Elsie Jury'—Mr. and Mrs. Sergio Bracci
Runner-up—'Angel Wings'—P. T. Gray Family

BEST THREE LARGE JAPONICAS

'Elegans Supreme'—Mr. and Mrs. Sergio Bracci
Runner-up—'Gullio Nuccio'—Caryll Pitkin

BEST THREE MEDIUM JAPONICAS

'Ragland Supreme'—Harlan Smith
Runner-up—'Herme'—Mr. and Mrs. Walter Harmsen

BEST FIVE JAPONICAS

'Grand Prix'—Caryll Pitkin
Runner-up—'Midnight'—Julius Christinsen

BEST THREE RETIC HYBRIDS

'Buddha'—Mrs. and Mrs. Jess George
Runner-up—'Lasca Beauty'—Ab Summerson

BEST FIVE RETIC HYBRIDS

'Francie L.'—Caryll Pitkin
Runner-up—'Francie L. Var.'—Harry Putnam

BEST THREE NON-RETIC HYBRIDS

'Julia Hamiter'—Fred Hamilton
Runner-up—'Elsie Jury'—Mr. and Mrs. Sergio Bracci

BEST SPECIES

'Sukiya Wabasuki'—Les Baskerville

BEST SPECIAL CULTURE BLOOMS

Japonica—'Elegans Champagne'—Mr. and Mrs. Harold Rowe
Retic Hybrid—'Kohrinor'—Mr. and Mrs. Lee Gaeta
Non-Retic Hybrid—'Elsie Jury'—Mr. and Mrs. Sergio Bracci

BEST NEW SEEDLING

Japonica Seedling—Kramer Bros. Nursery

GRAFTED PLANT AWARDS

One Year Old Graft—E. C. Snooks
Two Year Old Graft—Les Baskerville
Best Graft of Show—Les Baskerville

BEST COLLECTOR'S TRAY

Won by Mr. and Mrs. Sergio Bracci
Runner-up—Mr. and Mrs. W. F. Goertz

BEST NOVICE BLOOMS

'Carter's Sunburst'—Dr. Ben Woodward
Runner-up—'Kramer's Supreme'—John S. Rogers

COMMERCIAL AWARDS

Best Commercial Display—Mt. Woodson Nursery
Runner-up—Walter Anderson's Nursery

MILDRED JONES PERPETUAL TROPHY FOR MINIATURES

'Little David'—Mr. and Mrs. R. C. McNeil

SWEEPSTAKES AWARD OF MERIT

Won by Mr. and Mrs. Sergio Bracci

COURT OF HONOR BLOOMS

'Francie L.'—Mr. and Mrs. Fred Mowrey
'Grand Prix'—Caryll Pitkin
'Silver Chalice'—Marian Dejka
'Tiny Princess'—Mr. and Mrs. Bob McNeil
'Arch of Triumph'—Dr. and Mrs. Fred Mowrey
'Tomorrow'—Albert Summerson
'Wildfire'—Mr. and Mrs. Pat Novak
'Grand Prix'—Frank Davis
'Waltz Time'—Mr. and Mrs. Bob McNeil
'Pharaoh'—Frank Davis
'Angel Wings'—D. C. Gray Family
'Little Slam'—Mr. and Mrs. Harold Rowe
'Carter's Sunburst'—Mr. and Mrs. B. M. Pace
'Ava Maria'—Rudy Moore
'Doris Ellis'—Harlan Smith
'Tomorrow Park Hill'—Caryll Pitkin
'Valley Knudsen'—Mr. and Mrs. Sergio Bracci
'Anticipation'—Mr. and Mrs. Harold Rowe

TEMPLE CITY CAMELLIA SOCIETY

FEBRUARY 18 AND 19, 1978

BEST LARGE JAPONICA

'White Nun'—Bill Harris Family
Runner-up—'Gulio Nuccio Var.'—Caryll Pitkin
Second Runner-up—'Elegans Champagne'—Sam Ward

BEST MEDIUM JAPONICA

'Betty Sheffield Supreme'—Art Gonos Family
Runner-up—'Sawada's Dream'—Art Gonos Family
Second Runner-up—'Silver Chalice'—Art Gonos Family

BEST SMALL JAPONICA

'Ava Maria'—Mr. and Mrs. R. C. McNeil
Runner-up—'Alison Leigh Woodroof'—Mr. and Mrs. Grady Perigan

BEST MINIATURE

'Little Slam'—Wilkins Garner
'Pink Smoke'—Albert Summerson

BEST RETICULATA HYBRID

'Crimson Robe'—Fred Hamilton
Runner-up—'Dr. Clifford Parks'—Mr. and Mrs. Sergio Bracci

BEST NON RETICULATA HYBRID

'South Seas'—Mr. and Mrs. Sergio Bracci
Runner-up—'Elsie Jury'—Mr. and Mrs. Lee Gaeta

BEST SPECIES

'Star Above Star'—Mr. and Mrs. Harold Rowe

BEST TREATED JAPONICA

'Elegans Splendor'—Art Gonos Family
Runner-up—'Grand Prix'—Art Gonos Family

BEST TREATED RETICULATA HYBRID

'Dr. Clifford Parks'—Tom Hughes

- BEST TREATED NON RETICULATA HYBRID**
 'Elsie Jury'—Mr. and Mrs. Sergio Bracci
- BEST THREE LARGE JAPONICAS**
 'Adolph Audusson Special'—Mr. and Mrs. B. M. Pace
 Runner-up—'Guilio Nuccio Var.'—Caryll Pitkin
- BEST THREE MEDIUM JAPONICA**
 'Francis Butler'—Mr. and Mrs. R. C. McNeil
 Runner-up—'Eleanor Martin Sup.'—Mr. and Mrs. Milt Schmidt
- BEST THREE RETICULATA HYBRIDS**
 'Francie L.'—Mr. and Mrs. Sergio Bracci
 Runner-up—'Mouchang'—Mr. and Mrs. W. F. Goertz
- BEST THREE NON RETICULATA HYBRIDS**
 'Coral Delight Var.'—Art Gonos Family
 Runner-up—'Freedom Bell'—Mr. and Mrs. Sergio Bracci
- BEST RETICULATA HYBRID SEEDLING**
 Mel Gum and Meyer Piet
- BEST GROWER BLOOMS**
 'Coral Delight'—Kramer Bros. Nursery
 'Nuccio's Pearl'—Nuccio's Nurseries
- COURT OF HONOR BLOOMS**
 'Premier Var.'—Mrs. Harry Novick
 'Indian Chief Var.'—Mr. and Mrs. R. C. McNeil
 'Reg Ragland'—Mr. and Mrs. Harold Rowe
 'Kramer's Supreme'—Bill Harris Family
 'Carter's Sunburst'—Mr. and Mrs. Pat Novak
 'Tomorrow Park Hill'—Mr. and Mrs. Pat Novak
 'Carter's Sunburst Pink'—Mr. and Mrs. B. M. Pace
 Nuccio's Pearl'—Mr. and Mrs. Grady Perigan
 'Ace of Hearts'—Don Dawson
 'Glen 40'—Mr. and Mrs. H. C. Shropshire
 'Eleanor Martin Supreme'—Ron Braid
 'Midnight'—Judy Simmons
 'C. M. Hovey'—Mr. and Mrs. H. McC. Shropshire
 'Wildfire'—Mr. and Mrs. Harold Rowe
 'Maroon and Gold'—Mr. and Mrs. Roger Treischel
 'Pearl's Pet'—Bill Harris Family
 'Little Slam Var.'—Art Gonos Family
 'Valentine Day'—Mr. and Mrs. Pat Novak
 'Pharaoh'—Rudy Moore
 'Angel Wings'—Mr. and Mrs. Fred Mowrey

PENINSULA CAMELLIA SOCIETY

VETERANS' MEMORIAL BUILDING, REDWOOD CITY FEBRUARY 11-12, 1978

- First with 41 blue ribbons—Mr. and Mrs. Al Taylor
 Runner-up with 37 blue ribbons—Mr. Howard Oliver and Son, Bill
- VERY LARGE JAPONICA**
 Best Bloom—'Lady In Red'—Mr. and Mrs. Al Taylor
 Runner-up—'Dolly Varden'—Mr. and Mrs. Al Taylor
- LARGE JAPONICA**
 Best Bloom—'Louise Hairston Var.'—Mr. and Mrs. M. W. Abramson
 Runner-up—'Bob Hope'—Ms. Virginia Rankin
- MEDIUM JAPONICA**
 Best Bloom—'Donkelarii'—Mrs. Sal B. Davi
 Runner-up—'Dr. John D. Bell'—Mr. George Stewart
- SMALL JAPONICA**
 Best Bloom—'Black Tie'—Mr. and Mrs. Larry Pitts
 Runner-up—'Ave Maria Var.'—Mr. and Mrs. Philip Mobley, Jr.
- MINIATURE JAPONICA**
 Best Bloom—'Tom Thumb'—Mr. and Mrs. Anthony Pinheiro
 Runner-up—'Sam Barranco Pink'—Mr. and Mrs. Anthony Pinheiro
- VERY LARGE RETICULATA HYBRID**
 Best Bloom—'Valentine Day Var.'—Mr. and Mrs. Larry Pitts
 Runner-up—'Lasca Beauty'—Dr. and Mrs. Hugh Wang
- MEDIUM-LARGE RETICULATA HYBRID**
 Best Bloom—'Felice Harris'—Mr. and Mrs. Al Taylor
 Runner-up—'Chrysanthemum Petal'—Mr. Howard Oliver and son, Bill

NON-RETICULATA HYBRID

Best Bloom—'Angel Wings'—Mr. and Mrs. Peter Grosso

Runner-up—'Anticipation'—Mr. and Mrs. Douglas Batt

3 BOUTONNIERES

Best Tray—'Alison Leigh Woodroof'—Mr. and Mrs. Donald Lesmeister

Runner-up—'Kitty'—Mr. and Mrs. Philip Mobley, Jr.

3 MEDIUM-VERY LARGE JAPONICAS

Best Tray—'Fashionata'—Mr. and Mrs. James Randall

Runner-up—'Ecclefield'—Mr. and Mrs. Larry Pitts

3 RETICULATA HYBRIDS

Best Tray—'Valley Knudson'—Mr. and Mrs. James Randall

Runner-up—'K. O. Hester'—Mr. and Mrs. Larry Pitts

3 NON-RETICULATA HYBRIDS

Best Tray—'Anticipation'—Mr. and Mrs. Douglas Batt

5 JAPONICAS

Best Tray—'Fashionata'—Mr. and Mrs. James Randall

Runner-up—'Silver Anniversary'—Mr. and Mrs. Philip Mobley, Jr.

9 BLOOMS, DIFFERENT VARIETIES

Best Tray—'Tomorrow,' 'Guilio Nuccio Var.,' 'Nuccio's Gem,' 'Valley Knudson,'

'Lisa Gael,' 'Mouchang,' 'Four Winds,' 'Chittagong,' 'Charlean'

Mr. and Mrs. James E. Scott

MEMBER'S JAPONICA

Best Bloom—'Touch of Pink'—Mr. John H. Hall

Runner-up—'Finlandia White'—Mr. and Mrs. Charles Haid

MEMBER'S HYBRID

Best Bloom—'K. O. Hester'—Mr. and Mrs. Charles O'Malley

Runner-up—'Pharaoh'—Mr. and Mrs. Ernest Kolak

JAPONICA SEEDLING

Best Bloom—Mr. Joe Arruda

HYBRID SEEDLING

Best Bloom—Mr. Matt Talia

YOUTH (16 or under)

Best Bloom—'Tali Queen'—Bill Oliver

Runner-up—'Howard Asper'—Bill Oliver

WHITE CAMELLIA IN SHOW

Best Bloom—'Lucy Stewart'—Ms Virginia Rankin

Runner-up—'Nuccio's Gem'—Mr. and Mrs. James E. Scott

BEST ARTISTIC ARRANGEMENT (Open)—Mrs. Harry Devine

BEST MEMBER'S ARTISTIC ARRANGEMENT—Mrs. Mollie Apple

DELTA CAMELLIA SOCIETY

FOURTEENTH ANNUAL CAMELLIA SHOW—FEBRUARY 25 AND 26, 1978

BEST VERY LARGE JAPONICA

'Elegans Champagne'—Larry and Nancy Pitts

Runner-up—'Mathotiana Supreme'—Mr. and Mrs. Al Taylor

BEST LARGE JAPONICA

'Margaret Davis'—Mr. and Mrs. James Randall

Runner-up—'Mathotiana'—Mr. and Mrs. Don Bergamini

BEST MEDIUM JAPONICA

'Nuccio's Pearl'—Larry and Nancy Pitts

Runner-up—'Pearl Maxwell'—George Stewart

BEST SMALL JAPONICA

'White Deb'—Robert Marcy

Runner-up—'Tammia'—Mr. and Mrs. E. Busse

BEST MINIATURE JAPONICA

'Little Slam Var.'—Art Gonos Family

Runner-up—'Bon Bon'—Mr. and Mrs. C. A. Boynton

BEST WHITE JAPONICA

'Elegans Champagne'—Nancy and Larry Pitts

Runner-up—'Swan Lake'—Mr. and Mrs. E. Busse

BEST LARGE JAPONICA—YOUTH DIVISION

'Elegans Supreme'—Sandy Chilcote

Runner-up—'Easter Morn'—Sandy Chilcote

BEST MEDIUM TO SMALL JAPONICA—YOUTH DIVISION

'Tammia'—Sandy Chilcote

Runner-up—'Jean Marie'—Jene Pitts

BEST CAMELLIA NOVICE DIVISION
 'Mrs. D. W. Davis'—Ruthie and Bill Conway

BEST THREE MINIATURES
 'Spring Festival'—Mr. and Mrs. S. L. Bernstein
 Runner-up—'Sugar Babe'—Mr. and Mrs. Philip Mobley Jr.

BEST THREE SMALL JAPONICAS
 'Kitty'—Mr. and Mrs. E. F. Achterber
 Runner-up—'Maroon and Gold'—Mr. and Mrs. A. Pinheim

BEST THREE MEDIUM JAPONICAS
 'Cinderella'—Mr. and Mrs. Pete Grosso
 Runner-up—'Jean Marie'—Nancy and Larry Pitts

BEST THREE LARGE JAPONICAS
 'Nuccio's Gem'—Harlan Smith Family
 Runner-up—'Lady K'—Jack Lewis

BEST THREE VERY LARGE JAPONICAS
 'Grand Prix'—Art Gonos Family
 Runner-up—'Elegans Splendor'—Jack Lewis

BEST TRAY OF SIX JAPONICAS
 'Lady In Red'—Mr. and Mrs. Al Taylor
 Runner-up—'Easter Morn'—Harlan Smith Family

BEST RETIC HYBRID
 'Howard Asper'—Art Gonos Family
 Runner-up—'Harold Page'—Edith Mazzei

BEST RETIC HYBRID—YOUTH DIVISION
 'Valentine Day'—Jene Pitts
 Runner-up—'Mouchang'—Kirk Smith

BEST THREE RETIC HYBRIDS
 'Valley Knudsen'—Mr. and Mrs. Jack Randall
 Runner-up—'San Marino'—Mr. and Mrs. Ken Halstone

BEST TRAY OF FIVE RETIC HYBRIDS
 'Valette Day Var.'—Nancy and Larry Pitts
 Runner-up—'Dr. Louis Pollizzi'—Mr. and Mrs. James Scott

BEST NON-RETIC HYBRID
 'Sylvia May Wells'—Mr. and Mrs. Don Lesmeister
 Runner-up—'Wynne Rayner'—Robert Marcy

BEST NON-RETIC HYBRID—YOUTH DIVISION
 'E. G. Waterhouse'—Sandy Chilcote

BEST THREE NON-RETIC HYBRIDS
 'Taylor's Perfection'—Mr. and Mrs. Don Lesmeister
 Runner-up—'Elsie Jury'—June and Jim Grant

BEST BLOOM OF THE SHOW
 'Howard Asper'—Art Gonos Family

BEST SEEDLING
 Won by John M. Herndon
 Runner-up—Houghton S. Hall

CHALLENGE AWARD—Won by Nancy and Larry Pitts

SWEEPSTAKES AWARD—Won by Mr. and Mrs. Al Taylor
 Runner-up—Mr. and Mrs. Chas. Boynton

SPECIAL AWARD—MOST BLOOMS ON THE HEAD TABLE
 Won by Art Gonos Family

BEST COLLECTOR'S TRAY OF NINE BLOOMS
 Won by Art Gonos Family
 Runner-up—Harlan Smith Family

1977 CROP — CAMELLIA SEEDS

Japonica Seeds—\$3.75 per 100 (minimum order)

Sasanqua Seeds—\$1.50 per 100 (minimum order)

Reticulata Seeds—15c each

Southern California Camellia Society

P.O. Box 717

Arcadia, California 91006

SHOW RESULTS

POMONA VALLEY CAMELLIA SOCIETY

FEBRUARY 25-26, 1978

JAPONICAS, LARGE AND VERY LARGE

Best—'Lady In Red'—Mr. and Mrs. Jack Woo
Runner-up—'Elegans Supreme'—Arlene and Lee Chow
2nd Runner-up—'Tomorrow's Dawn'—Mr. and Mrs. M. W. Abramson
Court of Honor—'Elizabeth Dowd Silver'—Mr. and Mrs. Mel Canfield
'Adolph Audusson Var.'—Mr. and Mrs. A. V. McWilliams
'Han-Ling Raspberry'—Mr. and Mrs. Mel Canfield
'Tomorrow'—Mr. and Mrs. M. L. Schmidt
'Donckelerli'—Mr. and Mrs. A. L. Summerson
'Kickoff'—Mr. and Mrs. Wm. B. Johnston

JAPONICAS, MEDIUM

Best—'Wildfire'—The Bill Harris Family
Runner-up—'Betty's Beauty'—Rudy Moore
2nd Runner-up—'Betty Sheffield Sup.'—The Bill Harris Family
Court of Honor—'Silver Chalice'—Mr. and Mrs. Harold Rowe
'Sawada's Dream'—Dr. and Mrs. Richard Stiern
'Nuccio's Gem'—Dr. and Mrs. Fred Mowrey

JAPONICAS, SMALL

Best—'Ava Maria'—Mr. and Mrs. C. S. Bliss
Runner-up—'Maroon and Gold'—The Bill Harris Family
Court of Honor—'Kitty'—Mr. and Mrs. Jack Woo

JAPONICAS, MINIATURE

Best—'Little Red Ridinghood'—The Bill Harris Family
Runner-up—'Bos Bon'—The Bill Harris Family
Court of Honor—'Mini Pink'—Mr. and Mrs. Sergio Bracci

HYBRID, MINIATURE AND SMALL

Best—'Freedom Bell'—Mr. and Mrs. Mel Canfield
Runner-up—'Spring Festival'—The Bill Harris Family

TRAY OF THREE BLOOMS, SMALL AND MINIATURE

Best—'Ava Maria'—Rudy Moore
Runner-up—'Reeve's Sweetheart'—Mr. and Mrs. A. Wilkins Garner
Court of Honor—'Bon Bon'—The Bill Harris Family

TRAY OF THREE JAPONICAS, LARGE AND VERY LARGE

Best—'White Nun'—The Bill Harris Family
Runner-up—'Grand Slam'—Mr. and Mrs. Jack Woo
Court of Honor—'Guilio Nuccio Var.'—Mr. and Mrs. W. F. Goertz

TRAY OF THREE JAPONICAS, MEDIUM

Best—'Nuccio's Gem'—Dr. and Mrs. Fred Mowrey
Runner-up—'Sawada's Dream'—Dr. and Mrs. Richard A. Stiern
Court of Honor—'Midnight'—Mr. and Mrs. Mel Canfield

BEST BLOOM OF AUSTRALIAN ORIGIN

Best—'Margaret Davis'—Arlene and Lee Chow

HYBRID CAMELLIAS, VERY LARGE

Best—'K. O. Hester'—E. C. Snooks
Runner-up—'Miss Tulare'—The Bill Harris Family
2nd Runner-up—'Lila Naff'—Mr. and Mrs. A. L. Summerson
Court of Honor—'Nuccio's Ruby'—Dr. and Mrs. R. Stiern
'Howard Asper'—Mr. and Mrs. Jack Woo

HYBRID CAMELLIAS, LARGE

Best—'Fire Chief'—Mr. and Mrs. A. L. Summerson
Runner-up—'Valentine Day'—The Bill Harris Family
2nd Runner-up—'San Marino'—Mr. and Mrs. W. F. Goertz
Court of Honor—'Valentine Day Var.'—Mr. and Mrs. Ronald D. Braid

HYBRID CAMELLIAS, MEDIUM

Best—'Coral Delight Var.'—The Bill Harris Family
Runner-up—'Coral Delight'—The Bill Harris Family
Court of Honor—'South Seas'—Mr. and Mrs. Sergio Bracci

TRAY OF THREE HYBRIDS, VERY LARGE

Best—'Pharaoh'—Mrs. and Mrs. Sergio Bracci
Runner-up—'Kohinor'—Fritz Kahen
Court of Honor—'Nuccio's Ruby'—Wm. W. Donnan

TRAY OF THREE HYBRIDS, LARGE

Best—'Four Winds'—Mr. and Mrs. Lee Gaeta
Runner-up—'Valley Knudsen'—Arlene and Lee Chop
Court of Honor—'Corelian'—Mr. and Mrs. Harry Putnam

TRAY OF THREE HYBRIDS, MEDIUM

Best—'Tiptoe'—Mr. and Mrs. H. L. Rowe
Runner-up—'E. G. Waterhouse'—Mr. and Mrs. C. S. Bliss
Court of Honor—'Coral Delight Var.'—The Bill Harris Family

OTHER SPECIES

Best—'Koto-Hijime'—Mr. and Mrs. Sergio Bracci

HIGO CAMELLIA

Best—'Tenju'—The Bill Harris Family

COMMERCIAL GROWERS

Best Display—Clark Thomas Camellias
Best Bloom—'Guilio Nuccio Var.'—Kramer's Nursery

SPECIAL CULTURE, JAPONICAS

Best—'Easter Morn'—Mr. and Mrs. Jack Woo
Runner-up—'Ballet Dancer'—Mr. and Mrs. M. W. Abramson
Court of Honor—'Elegans Splendor'—Dr. Conway Woo
'Alta Gavin'—Mr. and Mrs. M. W. Abramson

SPECIAL CULTURE, HYBRIDS

Best—'Mis Tulare Var.'—Mr. and Mrs. Jack Woo
Runner-up—'Pharaoh'—Mrs. and Mrs. Jack Woo
Court of Honor—'Elsie Jury'—Dr. Conway Woo

SEEDLINGS JUDGED TO HAVE COMMERCIAL POSSIBILITY

Bananza x Mouchang—Unnamed—Mel Gum
Saluenensis—'Misstingtot Princess'—Kramer Bros. Nursery
Chance Japonica—'Very Cherry'—Mr. and Mrs. Walter Harmsen

GENETICS—SPELLED WITH THREE C's

By JOHN HERNDON

My subject today is quite complex, so I have tried to leave out most of the long strange words and still make it understandable.

First—I am going to discuss, briefly, plant growth by cell division; Second—plant propagation by cell separation, brought about by hybridization, crossing and sometimes by self-pollination; and lastly, chromosome doubling by the use of colchicine, other alkaloids and irradiation.

Before I start my short presentation, I would like to mention that most of you probably know as much about my subject as I do. A very few of you may know less, and this discussion is mainly for you. Then, there are those of you who know much more about this than I. Well, you are the ones that should be writing this article.

Let's start off with a quick look at cells—what they are made of—and how they function.

Plants consist of countless numbers of cells which are too small to be seen

by the naked eye. The majority of these absorb food, water and needed chemicals—and continue to enlarge throughout their lifetimes. This is one part of plant growth. Also—at the root tips and at the growth points of vegetative and floral buds, there are cells that contribute to plant growth by dividing and duplicating themselves.

Each cell contains a nucleus that is composed of chromosomes and their accompanying genes, together with fluid and other materials. To understand cell division and cell separation, perhaps we should first consider the chromosome and gene.

Every living thing has a separate and basic chromosome count. This is called the monoploid count. In Camellias, this basic number is 15. In humans, this basic count is 23.

Some species of Camellias, such as japonica and saluenensis have 2 sets of 15 chromosomes, or a total of 30, and are referred to as diploids. Some, such as granthamiana and most of the

hybrids between japonica and reticulata, have 4 sets, or 60 chromosomes and are called tetraploids. Another large group of Camellias, such as reticulata, sasanqua and others have 6 sets, or 90 chromosomes, and are known as hexaploids. Then, there are a few that are triploids with 3 sets or 45 and pentaploids with 5 sets or 75 chromosomes. Those with odd numbers of chromosomes are usually sterile.

Genes are different than chromosomes. They are very minute and are located at specific points along the chromosomes. These genes control the many traits, forms, colors, etc. that we usually say are brought about by heredity. They determine what the new plant will be like—as it emerges from the seed pod and starts life as an individual.

Now—back to cells, and how they are formed. Most of us are familiar with vegetative reproduction, by such means as grafting, air-layering, and the rooting of cuttings. In all such cases, new growth is formed by cell elongation and division.

In order to understand cell division, let's imagine a large circle and call it a cell. Then, imagine 2 sets of 15, or a total of 30 chromosomes inside the circle, or cell. During cell division, each chromosome splits into two matching chromatids. These, in turn, go to opposite sides of the cell. Next, a thin membrane forms dividing the cell into two parts, each part containing 30 of the new chromatids which later grow into chromosomes, each being identical copies of the original. Now we have two cells where we formally had only one. The other method of propagation is by sexual reproduction.

All of us know the parts of a flower. When a flower is formed, however, a new procedure takes place. In the cell that contributes to the flower, the chromosomes separate rather than split, as in growth cell formation. In the diploid, japonica for instance, the

cell contains 2 sets of 15 chromosomes, or 30. These two sets are attached to each other, much like twisted threads. The chromosomes in each set are attracted to their counterparts in the other set. During cell meiosis, these sets separate in such a way that one set goes to form the pollen grains, or male organ and the other set goes to form the ovary, or female part of the flower. This is the only time that Camellia cells have a single set, or 15 chromosomes. Upon fertilization, these two sets come together and form a seed having two sets or 30 chromosomes.

In theory, only those Camellias with even sets of chromosomes are fertile. Those with odd numbers are usually sterile—as there is no logical way that these 45 or 75 chromosomes can separate into two equal numbers for sexual reproduction. However, even this conclusion is not infallible. Camellia sasanqua, variety Narumigata, for instance, with its 5n or 75 chromosomes has been crossed with Camellia, granthamiana which has 4 sets or 60. The resulting hybrid was a tetraploid, having received 30 chromosomes from granthamiana as expected and oddly enough, 30 from Narumigata. Also, the 'Girls' (Dream Girl, Show Girl, etc.), as propagated by Mr. Howard Asper, were bred by crossing Narumigata (75) with reticulata (90). The Girls have 90 chromosomes each, having received 45 from each parent. However, this type of hybridization is unusual.

On the other hand, we would expect Camellia species with identical chromosome numbers to form fertile hybrids. This is not always the case. Crosses between Camellia, sinensis and C. rusticana, both of which have 30 chromosomes, seldom succeed. However, it is far better to understand the rule, rather than the exceptions.

Now for a few words about colchicine and its application to Camellia culture and hybridization. Colchicine

is a poisonous, medicinal chemical, derived from the Autumn Crocus and routinely used in the treatment of gout. Plant breeders have been experimenting with this drug since 1937 in an attempt to double the chromosomes of plants. Success in this work has produced such flowers as the *Tetra Snapdragons* and others. These flowers are usually larger, better textured and have much improved fertility.

When colchicine is applied to the vegetative buds of a plant, at a time when active growth is taking place, it acts as a narcotic, or poison. This shock prevents the formation of the wall, or membrane separating the two halves of the cell we have previously discussed. As a result, we now have all 60 chromosomes in the one original cell where we originally had only 30. This cell will continue to reproduce cells with 60 chromosomes in the future. Experimentation has led scientists to believe that this same chromosome doubling can be accomplished by irradiation.

The Northern California Camellia Society, Research Committee, composed of such experts as Dave Feathers, Ken Hallstone, Frank Pursel and others, has been cooperating with the University of California at Davis on irradiation of Camellia plants and rooted cuttings for several years, however, no information is available for publication at this time. Most of us feel that chromosome doubling will turn out to be the key to such things as new colors and fragrance.

There are several ways that colchicine can be applied. One is by dipping, or immersion. The seeds can also be soaked, but this method has not given very good results. The most productive method is to put a drop of diluted colchicine on the meristem, or growth point, of a plant—every other day—for from 3 to 6 applications.

Dr. William Ackerman used the following approach in producing the

colchicoid '*Fragrant Pink, Improved.*' He started with rooted cuttings of '*Fragrant Pink,*' a *C. rusticana* x *C. lutchuensis* hybrid that is very fragrant, but also nearly sterile. These plants were cut back from 18 inches to 6 inches and pruned so that only 2 or 3 branches remained at the base. All lateral buds were removed, except the upper three buds on each branch. These plants were placed under fluorescent and incandescent lights for 18 hours per day and fed a balanced fertilizer once a month in order to maintain a vigorous growth.

Colchicine was used at .5 per cent in 10 per cent glycerine in water. This dilute mixture was applied to the upper three buds on each branch of 56 plants at a time when the first signs of bud expansion were observed. This treatment was repeated every other day for 3 to 6 applications. Over 4 applications usually resulted in heavy bud kill. New growth was examined daily for abnormal changes, such as retardation, leaf distortion, large or thick leaves, leaves with contrasting areas of light and dark, etc. When microscopic examination of these abnormal sections proved that they contained 60 chromosomes, buds were forced into growth and cuttings were taken and rooted. Now, the chromosome doubling had been completed. The sterile '*Fragrant Pink*' had been transformed into the fertile '*Fragrant Pink, Improved.*'

In closing, I just hope that I haven't tried to put too much into this short presentation. I have tried to discuss, briefly, cells and their reproduction; chromosomes and their strange ways; a little about genes, a rough outline of colchicine and its uses and the product of these uses. I hope that you have enjoyed this short thing about *Cells, Chromosomes* and *Colchicine*, or Genetics spelled with 3 C's.

S.C.C.S. AWARDS PICNIC
JUNE 10, 1978
HOSPITALITY HOUSE

SAN DIEGO SOCIETY HONORS HARVEY SHORT

By E. C. SNOOKS

From time to time the camellia world has given birth to giants. Some names which quickly come to mind include Hume, Waterhouse, Peer, Hertrich, Illges . . . and many more. Tonight we have gathered to honor one of these giants and we are proud to claim him as one of our own. Tonight, we salute you, Harvey Short camellia breeder par excellence.

Over a span of about fifteen years, starting in 1950 Harvey introduced and registered over 100 cultivars. This, alone, is a record hard to equal, but it doesn't stop there. So outstanding were his "Camellias of Tomorrow" that he captured three Margaret Hertrich awards from the Southern California Camellia Society within a four year span. This coup began in 1952 with 'Bride's Bouquet,' followed the next year by 'Pink Clouds' and then one of his greatest, 'Guest of Honor' in 1955.

Other notable introductions include: 'Ballet Dancer,' 'Extravaganza,' 'Fire Falls,' 'Frosty Morn,' 'Gay Chieftan,' 'Grand Finale,' 'Margaret Short' (honoring his wife and guiding force), 'Masterpiece,' 'Owen Henry,' 'Pinnacle,' 'Prairie Fires,' 'Premier,' and 'Sunset Glory.' Paul Jones, the notable Australian painter of camellias, chose still another cultivar, 'Fair-est Day' as the subject of one of his paintings.

If all this were not enough, Harvey distinguished himself in still another realm. No other camellia breeder, past or present, has used a single cultivar in his breeding program so extensively nor so successfully. No less than seventeen cultivars share the common parent 'Lotus.' These are: 'Masterpiece,' 'Bride's Bouquet,' 'Fashion Note,' 'Frosty Morn,' 'Fair-est Day,' 'Guest of Honor,' 'Grand Finale,' 'Extravaganza,' 'Lovelight,' 'Break O'Day,' 'Sun-Up,' 'Dream A-

while,' 'Gay Feathers,' 'Pink Shadows,' 'White Throne,' 'The Pilgrim' and 'Streamliner.' Still another "family" of introductions share the parent 'Elegans,' 'Sunset Glory,' 'Seventh Heaven,' 'Pink Clouds,' 'Ballet Dancer,' and 'Owen Henry.'

As the years pass and some of these grand camellias are surpassed or forgotten still another talent of Harvey's will remain . . . his ability to come up with just the "right" name for his camellias. It has been suggested by some that this was accomplished by first conceiving the name and then waiting for a suitable flower to come along to fit that name. Harvey is still in demand by others to name their new introductions. That others are willing and indeed desire to have an outsider name their latest creation speaks well of his talent.

In recognition of the these superb efforts and his continuing interests and contributions to the furtherance of the genus *Camellia* and to our local society, the San Diego Camellia Society is proud to announce the institution of the Harvey F. Short Perpetual Seedling Trophy which is to be presented to the best new seedling entered in the San Diego Camellia show, when warranted. It shall remain the property of the Society and an appropriate token trophy will be presented to the winner.

The first winner of the trophy was Mr. Ben Mackall for an un-named seedling.

In Memoriam

WILBUR FOSS
MILO ROWELL
ANNE GALLI
FRANK REED



Gene Snooks and Harvey Short

CAMELLIA GRANTHAMIANA

By GEOFFREY GORER

Sussex, United Kingdom

Ed. Note: Reprinted from Rhododendrons 1975 with Magnolias and Camellias; the Royal Horticultural Society, London.

I think it is doubtful whether many amateur gardeners would have classified as a camellia the solitary small tree found northwest of Kowloon in the New Territories of Hong Kong in 1955 and named after Sir Alexander Grantham. In flower it more closely resembles *Gordonia lasianthus*, *G. axillaris* or *Franklinia altamaha* than it does any previously cultivated camellia (in my frost-free greenhouse it grows next to *G. axillaris* and when both are in flower together it is sometimes quite difficult to determine which plant a flower belongs to, apart from size); and its leaves and buds

do not resemble any other camellia. It is, however, a tetraploid camellia ($2n=60$) and is fertile with *C. reticulata* and *C. japonica*.

The leaves are ovate-lanceolate and markedly acuminate, up to 15 cm (6 inches) long and 7 cm (2 and one-half inches) wide and with serrated edges; they are markedly bullate with the veins impressed on the dark spinach-green upper surface and outstanding on the pale jade-green under surface. As a foliage tree it is distinguished at any time of the year; when the young foliage develops in early spring it is bright bronze for a few weeks and gives the tree a second season of beauty. A third season is given when the woody-looking buds develop; they look almost like pale

brown nuts (they are described in the *Botanical Magazine* as "perulate" and "leathery-crustaceous") in marked contrast to the leaves and complementing the deeper brown of the bark.

In my experience, the plant does not flower until it is about 2 m. (6 ft.) high; with me this took five years. But when it does reach flowering size it flowers with great freedom and regularity for about two months, typically November and December. The flowers are 15 cm (6 in.) and more across and consisting of nine pure white petals, three of which are narrower than the other six. The large boss of stamens (4 cm, one and one-half inches) is bright orange and the color is reflected on the glossy white petals, giving the impression of an orange glow at the base of the flower. The anthers are first cream-colored, contrasting with the stamens, and finally ripen to a pale gold. The white style is hidden by the stamens. When the flower is over, the petals and stamens fall in a single piece, leaving the style and the woody bud scales. My plant has never developed seeds.

Its cultivation needs seem to be the same as those of the *reticulata* camellias; a frost-free temperature (my thermostat is set at 37°F.), a light acid soil and, most importantly, no root disturbance. I have never seen it successfully cultivated as a pot plant and it needs plenty of room; it is a small tree, not a shrub. I consider it one of the most beautiful and interesting small trees I know. I do not know if it has been successfully grown outside in some very mild garden in Britain.

The *Botanical Magazine* of 1972 (N.S.L. 597) has a most detailed botanical description of *Camellia granthamiana* with a typically exquisite painting by Margaret Stones.

Apparently the American camellia growers are using *C. granthamiana* as a pollen parent for producing hybrids; the only one I have seen,

'China Lady,' is a rather ordinary single pink camellia though the leaves are slightly bullate. It seems to me that it might perhaps be possible to cross it with single white japonicas (such as 'Alba Simplex' or 'Devoniensis') to give hardness without losing too much of *C. granthamiana's* character and beauty. I think, however, that this is one more case where the species can only be diminished by hybridization.

WHAT IS A HYBRID?

By JIM McCLUNG

Most camellia fanciers follow the *Camellia Nomenclature* in deciding on the definition of a hybrid. T'aint so. There are, basically, three kinds of hybrids: intraspecific (the most common), interspecific (what one usually thinks of as a hybrid), and intergeneric (rare but it may be the source of our yellow camellia.)

An intraspecific hybrid is the offspring of two parents of the same species. That means that camellias of pure japonica ancestry (if there is such a thing) are hybrids. Your children are hybrids since they contain the genes of two different "cultivars." I have noticed that some of the A. C. S. writings now refer to japonica seedlings as "japonica hybrids." This is the strict interpretation of biological fact.

An interspecific hybrid is the offspring between two distinct species of the same genus. In nature the interspecific hybrid is usually sterile, short and spindly, or both. Take the example of 'Fragrant Pink.' It had the correct chromosome count to be fertile but had to be treated chemically to make it a viable pollen parent. It still refuses to set seed. Since most camellia hybrids that claim to be interspecific are both fertile and strong growers it would seem that pure interspecific crosses are rare. It is an indication that most of the parents we use are, themselves, hybrids.

An intergeneric hybrid is one be-

tween two closely related genera. Dr. Ackerman has successfully crossed the camellia with the franklinia. These crosses are extremely difficult to make but may prove to be the way that hybridizing will go in the future. Some of the closely related genera of the genus camellia have the characteristics that all hybridizers have been looking for in their camellia seedlings. A good example of an intergeneric cross is the 'fatshedera.' This hybrid is a cross between fatsia japonica and Hedera helix (English ivy), both members of the same plant family; just as gordonia, franklinia, tutcheria, stewartia, and a number of other plant genera are cousins to the camellia.

For those of us who are interested in hybridizing that "camellia-among-camellias" we are looking forward to the importation of new camellia relatives that can be used in our hybridizing program. California has an exceptionally fine bunch of hybridizers (it shows in the number of award-winning flowers of California origin) who will come up with the new colors and forms, so ardently desired.

LETTER TO THE EDITOR

Dear Bill:

Well, sum body finally got smart, as I red in the "Review" and the Southern Calif-or-nia Camel-lia Council is gonna put on a skool or sum kind of sem-in-ars for juges and peep who want to be juges on how to go about jugin camel-lias at a Camel-lia Show. Good deal. I have offen wondered where sum of the camel-lia juges lerned about juging. From sum of the jugin that I have seen at sum of the camel-lia shows, they sure culd stan some lernin. I dunno how many times I have seen sum very gorgus blums left on the table becuz sum juge din no what it was all about. I don mean to bad talk all of the juges, but sum time sum of the juges shoulda stayed at home.

HOW CUM that the peep who

want to juge camel-lias don wanna go to classes each year to keep up with the juging rules. U don hear about sports off-shials not wantin to go back to studyin the rules of a sport. Most of them spend most of ther summer goin over, studyin and ana-ly-zin the rules so that they can be better offshials. "Oh yeah," U say, they get paid for their work. Well, I don see any camel-lia juges takin any rag from the camel-lia ex-hib-itors, tho sum of the ex-hib-itors wuld like to no who the juges were that juged ther "hoped to be" priz winnin bloom, an let them no how they feel about the juging. An any way the juge is supposed to enjoy camel-lia shows, an being asked to juge at a show suld be an honor. From what I heer, it real-ly is sirt of a pres-tige ting, but most of the juges wanna get a chance to help in the juging of a comel-lia flour show. As an honor of being asked to juge a show, the juge shuld real-ly spend sum time in gettin better acq-uain-ted with the rules re-gardin that partic-ular camel-lia show.

It makes it a bit dif-ic-ult to see a camel-lia show after the jugin an wunder what the juges wer thinkin about. Sum times, it seems to me, after watchin and followin a team of juges, you wunder if it is a soshial visit among them. Sum times they all talk at once, sum times wun fella will be the lead-er an make all of the decishuns, an sumtimes all of the peep on the team have sum thin to say about the flour and then they make ther decishun. To really find out what they, the juges think about an say, U should follow the team as a clerk. Sum times I think the clerks no more about the judging than the juges. Oh well, U cant plez all of the ex-hib-itors all of the time and sum times it is hard to plez sum of the ex-hib-itors sum of the time.

Sincerely

A. Nany. Mus

CAMELLIA FLOWER ARRANGEMENTS IN THE ARTISTIC DIVISION OF THE SOUTH COAST CAMELLIA SHOW

By MAIZE GEORGE

A veritable Magic Carpet of blooms was unrolled for the visitor January 28, 29, 1978 at the South Coast Botanic Garden, 26,300 Crenshaw, Palos Verdes Peninsula when the South Coast Camellia Society members presented their first Annual Camellia Show. The display of blooms on black covered tables filled the huge Hall of Horticulture while the flower arrangers worked their "Magic of Camellias" around the walls of the hall.

The artistic chairman and committee skirted all tables with soft green fabric and provided light green backgrounds (48" high, 30" wide) for all design entries.

With "Magic of Camellias" as the theme, the class titles for exhibitors ranged from "Magic Wand" to "Alchemy" and "Black Magic." These were skillfully depicted by the use of other plant materials, both fresh and dried with of course, camellias as the focal flower. The title "Warlocks" indicated a section for men arrangers. The "Magic Carpet" then carried the exhibitor and the viewer on as "The Camellia Traveler" took them to the countries where the camellia is popular in the classes as provided for in the schedule of classes by the American Camellia Society for the 1977-78 Camellia Arrangement Photograph Contest.

The Young Arranger was stimulated with titles as "Hocus Pocus" and "Magic Box."

Competition was open to the public as well as members of Camellia Societies and enthusiasm was high among the local garden club members who contributed many of the outstanding designs. Accredited judges trained by National Council of State Garden Clubs, Inc., evaluated the many designs and awarded rib-

bons and trophies according to merit. Top artistic awards were won by:

Best Arrangement by a Member of South Coast Camellia Society—Mrs. Martha Ann Walter.

Best Arrangement by a Non-Member—Mrs. Al Mangles.

Creativity Award - Mrs. Ross Alger.

With such a beautiful facility as this two year old building, it was easy to stage the queen of the flowers beautifully and effectively.

ARTISTIC DIVISION WINNERS

Section I, Class 1, Magic Wand

1. Helen Gates
2. Paula Whipple

Section I, Class 2, Bewitched

1. Jane Alger
2. Ernie Chapa
3. Lew Bothwell
4. Edna Schoenbaum

Section I, Class 3, Soothsayer

1. Edna Schoenbaum

Section I, Class 4, Illusion

1. Jean Mangels
 2. Rita Roberts
 3. Jean Mangels
- HM Karen Dullack

Section I, Class 5, Alchemy

1. Jane Alger, Creativity Award.
 2. Ernie Chapa
 3. Helen Gates
- HM Edna Schoenbaum

Section I, Class 6, Black Magic

1. Jean Mangels (Non Member Trophy)
 2. Netta Hafler
 3. Helen Gates
- HM Lew Bothwell

Section II, Class 7, Crystal Ball

1. Paula Whipple
2. Helen Gates

Section II, Class 8, Voodoo

1. Martha Ann Walter, Member Trophy

Section IV, Class 9, Enchantment

No entries

- Section IV, Class 10, Genie
 1. Dale Christensen
 2. Paula Whipple
- Section V, Class 11, Bedeviled
 1. Dale Christensen
- Section V, Class 12, Spellbound
 1. None
 2. Judy Simmons
- Section VI, Class 13-a, China, tall
 1. Dale Christensen
 2. Paula Whipple
 Class 13-b China, low
 1. None
 2. Paula Whipple
- Section VI, Class 14, Australia
 1. Karen Dullack
 2. Edna Schoenbaum
 Class 15 No Entries
- Section VI, Class 16, New Zealand
 1. Rita Roberts
 2. Jean Mangels
 3. Rita Roberts
- Section VII, Class 17, America
 1. Frances Cobb
 2. Jane Alger
 3. Helen Gates
- Section VI, Class 18, Japan
 1. Edna Schoenbaum
 2. None
 3. Paula Whipple
- Section VIII, Class 19, Hocus Pocus
 Age A 1. Jason Dullack
 Age B 1. Kristian Dullack
 Class 20, Magic Box

JUDGING SYMPOSIUM

Ed. Note: Written from notes taken by Dorothy Christensen and Mrs. Marylee Gray by Mrs. Gray.

The first judging symposium in several years was hosted by the Southern California Camellia Council at the Los Angeles County Arboretum on Saturday, February 4, 1978. The intent of the symposium was to provide information to improve the quality of judging at camellia shows. The speakers' highlights follow:

Show Management: Sergio Bracci

Advance planning and preparation are vital for a successful show. Meetings with the show chairmen lay the

groundwork far in advance of the show.

The chairman must select people for working the Court of Honor who know varieties by description and classification. He must provide the Court of Honor with a show schedule.

Competent people must be selected for the placement committee, as the validity of the show is dependent upon proper placement. In setting up for the show, allow table space for those varieties where it is likely to be needed. Since popular varieties come and go, refer to bloom counts of the recent years to determine which varieties will be heavily entered. At present, the E's and G's need extra space. While the blooms are being placed, keep monitoring the space situation and make adjustments, if necessary.

The Clerk Chairman must be furnished with a copy of the judging teams and where each team will begin.

A businesslike attitude must be maintained at the Court of Honor. The awarding of honor ribbons for blooms below the winning and Court of Honor blooms was suggested as a way to extend much-needed encouragement.

Trophies should be assigned to the various divisions and classes before the show so that the better trophies are awarded in the classes where the most competition exists. The cartons should be so labeled to prevent confusion in unpacking at the show. The Show Chairman may determine that the competition in a particular class does not warrant an award.

The Chairman of Judges should be encouraged to employ novice judges to train with qualified judges.

The Show Chairman owes a well-deserved "thanks" to all who have assisted with the show. He needs to remember that shows are intended for the education of the public.

Responsibilities of the Chairman of Judges: William E. Woodroof.

The principal responsibility of the show management is to the general public; the secondary responsibility is to the exhibitors.

The Chairman of Judges should be a top qualified judge with a broad experience in growing camellias and a vast knowledge of the varieties of camellias, new and old. He must know the abilities of the judges selected and be able to communicate and work with them. He must be able to make good, prompt decisions and have the toughness to accept no interference in judging that would compromise the ability or integrity of the judges.

It is the duty and responsibility of the Chairman of Judges to select qualified judges. The person named as the captain of each team should be a top, competent judge from the area of the show. Judges should be assigned to their areas of greatest expertise. The problem inherent with miniatures is that generally only those who grow and exhibit miniatures are knowledgeable enough to judge them.

Novice judges should be used, but only one to each team with two qualified judges. The novice should be flexible and bow to expertise. Out-of-date judges should be assigned as if they were novices. Foreign visitors should either be assigned to a regular team as an observer or be assigned as a novice.

Friendships and obligations have no place in the selection of judges and Team Chairmen. The Chairman of Judges should know his judges and place them on teams where they are compatible. Any top, competent judge will not feel badly if he is not invited to judge a particular show.

For the judging of seedlings, select top judges, but keep their selection known only to the chairman of judges. A commercial grower should be included, if possible.

The speaker suggested that the three Head Table Judges, not a

whole group of judges, should select the top flowers.

The Chairman of Judges should have full knowledge of the rules and regulations that govern the show. He must circulate during the judging to keep judges progressing.

The three Roving Judges, in addition to filling in where one of a team is exhibiting and has disqualified himself, can, as a team, review the judged tables to be sure all top flowers have been sent up for honor consideration. A variety not in the nomenclature book may be judged and awarded, but it may not receive a top award.

If a variety is listed in the nomenclature book with a size variation (e. g., medium-large), a bloom should be judged in the class size that is indicated by its actual size.

During the judging and selection of award blooms, the Chairman of Judges has full and final authority and must not allow any interference with the judging.

Each bloom should be judged against the standard of perfection for that variety. Varieties that have distinct, different flower forms should have different classes for these forms.

Qualification of Judges: John Augis

Prospective judges should begin their training as clerks. They should listen to the judges, learn their procedures, review the judges' decision, observe the different styles of judges, and select one to imitate.

Qualified judges should insist that novice judges have a chance to judge on their own. A class should never be judged by the stated decision of one judge alone. Decisions with explanations should be made by the team. A novice on the team needs and deserves instruction, explanation, and discussion. Rotate the lead judge to avoid the possible domination of one judge.

Each judge must keep abreast of the new varieties by any and all in-

formation available to him. Studying the new varieties at each show is most beneficial.

The new rules and regulations for ACS appointed judges require that one 1) know and be familiar with at least 75 varieties, 2) know and abide by the rules and regulations for judging, 3) study and know the new varieties, and 4) accept assignment to shows. A novice who has been an ACS member for 5 years and judged at least 5 ACS-accredited shows within 5 years may apply to become an accredited judge. A written examination and the recommendation of accredited judges with whom he has judged are further required. For an accredited ACS show, the show must be governed by ACS rules and regulations, and the show chairman should order an ACS show kit for \$10.00.

The speaker suggested that judges need to be requalified every three to five years. An accredited judge may apply for status as an Emeritus Judge. As such, he need not accept all invitations to judge.

Questions concerning the impossibility of attaining ACS accreditation when area shows are not ACS accredited brought the announcement that the Southern California Council will soon begin work on guidelines for California accredited judges.

Privilege of Judges: W. F. Goertz.

An invitation to judge is an honor and should be acknowledged promptly. A judge should bring his nomenclature book and whatever other equipment and information is needed. A judge is entitled to have a competent clerking team and thorough instructions from the show management. At the meeting of judges, the Chairman of Judges should supply the captain of each team with an envelope containing necessary items—pencils, badges, written instructions, head table location, number of blooms to be sent to the head table, and ballots for final voting.

Judges should avoid unnecessary

handling of a bloom, but they may move a flower for better viewing or check for gibbing or request the clerks to do this, provided specific instructions were not given by the Chairman of Judges.

Actual judging is the best way to learn the art. It is a privilege to have the acquaintance of other competent judges. Ladies are encouraged to become judges. A judge should fairly acknowledge if he is unfamiliar with a variety. Particularly in multiple classes, judges need to give due consideration to the older varieties and not be guilty of awarding wholly on size.

Whenever a judge has a bloom in a class which his team is judging, he should step far enough away so that he cannot hear or interfere with the judging of the class.

Misplaced blooms are the responsibility of the Placement Committee. A class should not be rejudged and the show delayed on account of misplaced blooms.

Duties of Judges: Caryl Pitkin

Judging invitations must be promptly acknowledged.

The three member judging team is the most desirable grouping.

Judges should not judge their own flowers, but call a roving judge to replace him for that class.

The captain of the judging team should assure fairness among judges by allowing each to have an equal opportunity to voice an opinion.

A team which has completed its assignment should report to the chairman of judges to determine if there is another assignment.

Each judge should show the courtesy of allowing each of the other two judges to view the blooms equally well, to voice opinions, to question a decision, or to defend a position. While taking care not to damage the blooms, judges may move flowers in the interest of better judging.

Seedlings and Sports: Meyer Piet.

A judge of camellia seedlings and

sports should be an excellent camellia judge and also be aware of the methods of hybridizing. A good seedling needs to be different from those already available and have possible commercial value. A seedling which produces an excellent flower should not be awarded if it is not sufficiently original.

Seedling blooms should be judged on the overall flower, and the blemishes should be overlooked. Color is a most important consideration in rating a seedling. Unusual colors, marking, or variegations are assets. No gibbed seedling flowers should be entered in competition. Hybridizers should seek flowers which fall in one piece. Without the color factor in white camellias, careful consideration must be given to those varieties which are already available.

Camellia Judging: William E. Woodroof, Stanley W. Miller, Ernest E. Pieri, Grady Perigan, Harold Dryden.

For camellias to be fairly judged by size, they should be judged in the class where their actual size places them, rather than in the smaller size of the nomenclature listing. 3-4" is medium; 4-5" is large; over 5" is extra large. Boutonnieres definitely must not be overlooked. Those varieties which are not in the nomenclature book should not be sent to the head table.

Hybrid camellias, because of their size, need to be assigned more table space per flower. Using variety cards would assist their placement.

Judging progresses easier if the top flower is selected rather than bottom flowers being eliminated. Each bloom should be judged on its appearance at the time of judging. Gibbed flowers should retain their characteristic form and color.

The most competent teams need to be assigned to the hybrid categories.

Trays of multiples of 3 or 5 must be judged as a unit. Each bloom on the tray should be as similar as possi-

ble in side, color, form, and variegation. Collectors trays should appear as a compatible, pleasing unit.

Judging at the Court of Honor:
Walter Harmsen.

Flowers which survive to final voting are generally such superb flowers that the ACS requirement of a majority of ballots is impractical, if not impossible. Therefore, the Southern California Council has approved a statistical method which assures that the top blooms receive the top awards. This method is outlined in detail in the January, 1976, issue of the *Camellia Review*.

Once a bloom is sent up for honor consideration, the exhibitor card is covered with a plain card showing only an identifying number and the variety. These prenumbered cards for the Head Table indicate to the Head Table Judges the number of blooms to be considered in the final voting. Ideally, this number should be about two or three more than the number of awards to be given. Whenever the number of blooms submitted in a class exceeds this number, the Head Table Judges eliminate the lowest bloom from the Head Table. Each successive bloom is judged against the lowest of the remaining blooms.

At least nine judges, receive ballots for final selection in each class. Preferably, these judges will be other than those who judged the class initially. If six placements are to be given, the first place on each ballot receives 6 points; the second, 5 points; etc., down to 1 point for sixth place. Each class has a tally clerk who determines the winners and affixes the appropriate stickers on the exhibitor's cards in preparation for placement on the Head Table.

Head Table Judges must be among the most knowledgeable of judges, and, as such, are qualified to judge the seedlings and sports during the early judging before elimination from the Head Table begins.

HOW TO ENTER A CAMELLIA SHOW

By E. PIERI

Many Californians enjoy growing camellias and take great pride in the size and perfection of their flowers. If you are one of these, you can increase your enjoyment of the flowers considerably, by entering the best ones in a camellia show. You are eligible to enter any of the shows, whether you own one camellia plant or many. You do not need to be a member of a camellia society or belong to any other garden club to compete. The rules require that you be an amateur gardener. Children can also compete in these shows.

The great majority of the flowers that are exhibited are well known standard varieties. Some of the more advanced camellia exhibitors, however, enter new and interesting flowers from new seedlings, sports or hybrids they have either developed or grafted from original plants.

The more enthusiastic competitors enter shows that start on the last week in January and extend through the third or fourth weekend in March. Some of the exhibitors not only compete in one show, but have been known to send camellia blooms by other interested exhibitors to other camellia shows on the same weekend. In California, two or more shows may take place on the same weekend, especially if these shows are open to all camellia exhibitors in Northern, Central or Southern California. Usually the complete list of California Camellia Shows are listed in the December or January issue of the *Sunset Magazine*, or other flower and garden magazines. Most shows run two days, Saturday and Sunday, on a schedule that follows a general pattern.

After reading the garden magazine discussing the dates for the various camellia shows throughout the state, select the one nearest your home, and write to the secretary of the Camellia

Society requesting a Show Schedule, registration card and entry cards. You should first complete the registration card, and thoroughly read the schedule to acquaint yourself with the various Divisions and Classes in each division. When you cut your blooms, be sure to make out the entry card. Use a soft lead pencil to fill in the name of the bloom and the division it is to be exhibited, then complete the rest of the information requested on the entry card.

To prevent bruising your display flowers, during transportation, they should be placed in a large, but not necessarily high box, with the bottom of the box lined with aluminum foil to prevent drainage from the box and then place cotton, shredded paper or other soft material on top of the foil. Dampen the filler material with a fine spray of water before placing the blooms on the filler. As you place the blooms in the container, place a label or entry card either with the bloom or at the end of each row of blooms in the box as a means of remembering the name of the bloom so that you can place it with the entry card on the exhibitor's table in its proper location. After you have placed the blooms in the box, you might spray the flowers lightly and then put on the top of the container and place the box in a cool shaded area.

As per the information given on the schedule, you will be permitted to place your blooms during a given time period. If you are a bit apprehensive regarding your ability to place your blooms, members of the Placement Committee will be ready to help you.

Entries will be accepted the morning of the opening day, this will usually be between 7:30 to 10:00 or 10:30 a.m. on Saturday. If you have not asked for entry cards prior to the show, they should be secured at the

registration table and completed before placing the blooms. It will make the placement of blooms on the exhibitors' tables much easier if your entry cards are filed alphabetically in their correct division and class.

After you have placed your blooms on the table, you, as well as all exhibitors are asked to leave the exhibit area. This is done to clear the area of visitors, you included, so that the members of the Placement Committee can begin to prepare the tables prior to the commencement of the judging of the blooms.

The judging of the blooms, done by teams of three judges to a team commence their duties, usually around 10:30 to 11:00 a.m., and must complete their judging assignments for all divisions and classes, with the prize winning blooms being placed on the Awards Table, and ready for the public to view the exhibit, usually around 1:00 to 1:30 p.m. The Show is then open to the public on Saturday and then closed around 4:30 to 5:00 p.m. to reopen on Sunday morning at 10:00 a.m. and closing Sunday afternoon at 4:30 p.m. Generally there is no admission charge.

For the first time exhibitor, it is quite a thrill to see the blue, red or white ribbon awarded to his bloom. If he wins something he is "hooked" for life!

MINIGARDENS ARE FOR MANY PEOPLE

Vegetable gardening is fun. And it is, not limited to homeowners. Even if you live in a townhouse or an apartment you can still be a vegetable gardener. As long as you have a patio, a balcony, a doorstep, or even a window sill you still have enough space for a minigarden. And USDA has a booklet that will help you get good results. It's called "Minigardens for Vegetables."

The booklet explains that to become a gardener, you don't need expensive containers. Bushel baskets and old pails serve nicely as pots. And for help in starting plants, the book shows how to root plants from a plastic bag. It also gives instructions on how to mix your own soil and fertilizer.

"Minigardens for Vegetables" has a complete chart on planting and harvesting times, and light and water requirements for 18 easy-to-grow vegetables.

For vegetables that are as attractive as they are tasty, the booklet lists several varieties, such as the "Tiny Tim" miniature tomato, that will add color and sparkle to any garden.

Published by the Agricultural Research Service, the 12-page guide will help vegetable gardeners grow just about anything from A to Z—avocados to zucchini, that is.

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CONTROLLING SOIL SALINITY IN CAMELLIA CULTURE

By HAROLD E. PEARSON

Before discussing the tolerance of camellias to soil salinity, the differences between alkaline and saline soils must be clearly understood. Camellia growers are more or less familiar with the term alkaline as opposed to acid soils. The degree of alkalinity or acidity is measured in pH units. An acid soil has a pH below 7, neutral soils have a pH near 7, and soils with a pH above 7 are alkaline. Southern California soils are usually neutral or slightly alkaline, and the camellia grower has given considerable attention to the problem of providing a slightly acid environment by the use of acid-peat, sulfur, and other acid soil conditioners. In spite of these precautions, camellias on acid soils have not always thrived. Sometimes irrigation or fertilization methods give rise to a saline soil. The various mineral salts contained in irrigation waters and fertilizers may accumulate in the soil due to insufficient use of water or overdoses of fertilizers. These salts in the soil may have no appreciable effect on the pH of the soil, or in some cases they may cause the soil to become either more acid or more alkaline. Thus it is possible to have acid and alkaline soils which are non-saline, acid-saline soils, and alkaline-saline soils.

Since the relative importance of these various soil conditions on camellia growth had not been thoroughly investigated, it was believed that controlled studies on pH effects and salinity effects would be useful to camellia growers. The following report summarizes the results of experiments with camellias grown with culture solutions at various salinity levels. Dr. James Bonner has reported on the effects of pH on camellia culture, and the control of pH will not be discussed in this report except to illustrate

where confusion exists in trying to control alkalinity and salinity.

Young Pink Perfection camellias, propagated from cuttings, were planted in a medium consisting of 3 parts of No. 4 gravel and 1 part of acid peat. The plants were watered daily with a culture solution containing the required nutrient minerals and various amounts of added salts, principally sodium sulfate, sodium chloride and calcium sulfate (gypsum). In most cases these salts were mixed in several proportions to vary the relative amounts of calcium and sodium in the solution. The total amount of nutrients and added minerals ranged from 800 parts per million to 8400 parts per million (ppm). Seventeen different treatments were established and observations were made on growth rates and the appearance of abnormal symptoms in the foliage. It is important to remember that the entire root system was drawing water and minerals for its nutrition from these solutions which were maintained at the desired concentration throughout the experiment.

After 3 to 4 months some response was noted in the plants grown with the more saline solutions. The leaves showed minor tipburn on a few plants treated with culture solutions containing 3500 to 4300 ppm. of total dissolved salts. The amount of tipburn increased progressively as the salinity of the cultures increased to 8400 ppm. in those cultures containing a mixture of sulfates and chlorides in a ratio of approximately three to one, respectively. The most severely injured plants were grown in a culture containing 1750 ppm. of sodium chloride added to the nutrient medium making a total of 2700 ppm. During this period, there was relatively little difference in the growth and appear-

ance of plants growing in media with a high calcium and low calcium status in relation to the amount of sodium present.

With the advent of the next growing season, those plants in cultures containing more than 4300 ppm. total salts failed to initiate new growth or in some cases the buds swelled and subsequently withered. Plants treated with culture solutions containing 3100 and 3500 ppm. were normal as evidenced by the absence of tipburn, but the growth was a little slower than in the nutrient cultures with no sodium sulfate or sodium chloride additions.

Many factors, such as, light intensity, temperature, and relative humidity of the air influence the response of plants to saline soils. Under the conditions of this experiment, the tolerance of the Pink Perfection camellia to salinity due principally to sodium sulfate was in the neighborhood of 3000 to 3500 ppm. The tolerance to sodium chloride was much lower, but the range of concentrations chosen does not give a precise figure. The presence of chloride, expressed as sodium chloride, probably should not exceed 1000 to 1500 ppm. If the conditions for growth had been more favorable, the degree of injury at a prescribed salinity level would have been less manifest. Contrariwise, with a less favorable environment, a lower range of tolerance might have been indicated. Different camellia varieties display individual response with respect to soil salinity just as they show differences in sensitivity to sunburn or frost injury.

From the camellia grower's point of view, the recognition of symptoms of saline injury and the means of controlling salinity is of greater importance than the exact degree of tolerance under some set of conditions which might be different than his. The most typical symptom of salinity is the browning of the tip or margins of old, mature leaves. Following the initial appearance of the dead

area, it spreads over a larger portion of the leaf until it drops. Slow growth may also indicate the presence of salts in the soil, lack of fertilizer, or hazardous watering methods.

Another abnormal leaf symptom is marked by gradual loss of color at marginal areas on young foliage followed by collapse and drying which causes a cupping under of the leaf. Leaves showing this type of injury usually drop prematurely. This condition is not specifically related to high salinity for it seems to be associated with more than one form of malnutrition of camellias. In certain cases the calcium absorbed by the leaf is subnormal and an excess of potassium or sodium is found in the leaf. This suggests the need of an adequate calcium supply to maintain a balanced nutritional status and to prevent the absorption of too much sodium and potassium by the camellia roots. Sodium can accumulate in the soil from irrigation waters, and manure applications may also introduce sodium chloride. High amounts of potassium may be introduced by fertilizers.

The mineral salts dissolved in the irrigation waters used extensively in Southern California are not present in large enough quantities to cause direct injury to plants. The total salines in these waters varies from 250 ppm. to 800 ppm. If irrigation methods do not provide for the movement of some water below the root zone, it is apparent that the minerals contained in the water will multiply in concentration as the evaporation and transpiration removes much of the water between irrigations. It will merely take longer for the concentration of these minerals to reach critical levels when using waters of lower mineral content. For example, if a camellia uses one half of the soil moisture each week between irrigations, the 800 ppm. water in the absence of any drainage would have increased the concentration of the soil solution

to 3200 ppm. after 7 weeks; and the 250 ppm. water would produce the same result in 25 weeks.

Fortunately most camellia growers have provided good drainage for their plants in order to remove excess water during the periods of heavy rainfall. By applying extra irrigation water to move mineral salts below the root zone, the good drainage can be made to serve a dual purpose. As indicated in the previous paragraph the frequency of these heavy irrigations to prevent the accumulation of salts in the root zone depends on the degree of mineralization of the water.

Part of the constituents of irrigation waters contribute more to making the soil alkaline than they do to increasing soil salinity. Calcium bicarbonate and sodium bicarbonate fall into the former category. Sulfur and other acidifiers are beneficial in offsetting this effect of alkalinity. When the sulfur or soil acidifier is added, the instructions suggest that the material be watered in thoroughly. If these instructions are followed, the plant often makes improved growth.

If through failure to water heavily, the plant failed to respond even though the soil was now acid, the original trouble may have been due to soil salinity rather than soil alkalinity. The combination of acidification and heavy irrigation has probably solved a considerable number of cases diagnosed as alkalinity problems which are in reality salinity problems. The copious use of irrigation water cures most salinity problems without additional treatment. When leaching with soft waters which are low in calcium and magnesium, it is sometimes necessary to add sufficient calcium or magnesium to the soil to maintain a balanced nutritional for the camellia. Liberal applications of gypsum will not harm the soil, and it can be used to restore the calcium supply to an adequate level.

The relative amounts of the saline and alkaline constituents in waters can

vary widely. The saline portion may vary from one-fourth of the total dissolved solids to three-fourths of the total. In the case of the softened Colorado River water in which the writer is especially interested, about 77 per cent of the elements present out of the total of 740 ppm. contribute to soil salinity if inadequate leaching methods permit an accumulation of these salines in the soil. In order to prevent the accumulation of sodium sulfate, the principal constituent of the softened Colorado Aqueduct water, in the root zone of camellias, an extra heavy irrigation is desirable at least once every 6 to 8 weeks for field-grown plants. Plants in containers require more frequent irrigation; therefore, the leaching process should receive attention at shorted intervals.

It must be borne in mind that heavy irrigation tends to leach away some of the valuable fertilizer elements, especially the nitrate nitrogen. In order to maintain soil fertility, water soluble fertilizers should be applied after the leaching process is completed. The use of slowly-soluble organic fertilizers can overcome this difficulty very satisfactorily. The organics referred to are cottonseed meal, bone meal, and fishmeal.

Camellias came originally from regions of heavy rainfall and high humidity. Under these conditions they were accustomed to well-leached, well-drained soils of low saline content. To obtain maximum growth of camellias, salinity levels should be kept as low as possible. This can only be done by proper attention to fertilization and irrigation methods.

ODDS AND ENDS

By JIM McCLUNG

Did you know that the Higos are here?

According to the *Camellia Nomenclature* a Higo is the "name used as general name for special garden form of *Camellia japonica*. Form is generally single, with a few varieties slight-

ly semi-double, with thick, round, broad petals and stamens of white, soft pink, and pale yellow standing out independently from the base. Plant is comparatively dwarf in growth habit . . . ”

This description seems both cold and clinical when describing one of Japan's favorite *Camellia japonica* forms. The beauty of the Higo lies in its simplicity—a beauty that more and more American fanciers are discovering. We are so accustomed to the Higo's great gaudy sisters that we lose our sense of beauty when it is so simple. Gradually we are regaining a lost touch, a touch that every child has.

The petals of the Higo are in all of the *japonica* colors and variegations. They are, in themselves, beautiful. Some lie flat; others form a shallow cup; while still others are wavy. In spite of their beauty the main purpose of the Higo's petals is to form a colorful background of the flower. In them lies the real beauty and simplicity of the Higo.

Try a few Higos in your collection. You will find a new dimension in camellia culture.

* * *

After more than two millenia of inbreeding and outcrossing the garden *japonica* is notoriously unstable in its genetic makeup. All *japonicas* should have 30 chromosomes. They are natural diploids. However, we find them with many different chromosome counts.

It is this genetic instability that causes *japonicas* to mutate, or sport. Some are even grouped together as families because of their propensity for mutating.

We do not know what triggers the first mutation. Something causes a series of binding hydrogen atoms to move to new locations. Take 'Elegans (Chandler)' as an example. It was stable for 118 years before it's first sport appeared. Since 1949 the fam-

ily has been extremely consistent in producing new and stable mutations.

This much we can say. If a *camellia* has mutated to the point of sporting a new kind of flower then a great deal has happened to its genetic structure. A simple gene mutation is unobservable to the naked eye. The mutation of thousands-upon-thousands of genes is required to make a 'Tomorrow Park Hill' or 'Elegans Champagne.' Each chromosome is composed of hundreds of thousands of genes. And it is a chromosomal mutation of many genes that gives rise to a visible sport.

There are many hypotheses as to what causes a plant to mutate. Yours is as good as anyone else's until someone does a great deal of study with an electron microscope. Let us all be grateful for the added beauty that mutations give to the *japonica* world.

* * *

Some of our *camellia* people have taken offense at things I have written in this column during the past year. My reply to that is, "tish, tish." Complain to the Editor.

All organizations need a gadfly to land on their rumps and move them to action. If I am that gadfly, stinging our societies to the action of becoming better, then I have done my job. If I have made enemies in so doing, then I know that my job was well done. If I see changes for the better in our societies my time spent in writing about our problems is time well spent and the whole thing has been worthwhile.

* * *

Have a happy summer.

The man selling ten-dollar tickets at the race track was astounded when one of the horses in the next race came up to the window and asked to bet a bundle on himself.

"What's the matter," snorted the horse, "are you amazed I can talk?"

"Not at all," said the man, "I'm astonished to think you can win."

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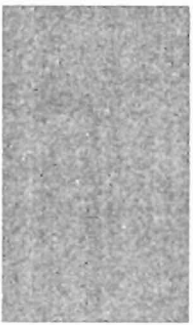
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