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Hybrid camellia BRIGADOON
(from a cross of *C. saluenensis* x *C. japonica* "Princess Baciocchi")
— Courtesy Armstrong Nurseries, Inc.

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PROGRESS MADE IN HYBRIDIZATION IN THE U.S.A.

Mrs. M. J. (Lillette) Witman, Macon, Ga.

It is fun to plant a seed and see it germinate, especially one that is picked from our own shrub, but nothing can equal the feeling of pride and the sense of accomplishment that comes upon one through the very creation of the seed itself by either cross-pollination or hybridization. Mr. J. Howard Asper, an eminent hybridist, told this writer several years ago—"Once you have "created" your own you are no longer eager to "chase" after other people's seedlings." More and more camellia enthusiasts in this country are finding how true this is and are learning the art of controlled cross-pollination.

A little over a decade ago camellia hybrids were practically unknown in the United States. It was due to enterprising and far-seeing men, among them Dr. Walter E. Lammerts, then research scientist at the Descanso Gardens at La Canada, California, and two keen amateurs both now deceased—Mr. Ralph S. Peer and Dr. Walker M. Wells—that new species and their hybrids began to trickle to this country from Europe and Asia in the form of scions, seeds and plants. It must be mentioned here that as early as 1943 Mr. T. J. Smith of McRae, Georgia, the treasurer of the American Camellia Society since its formation and one of the earliest collectors, imported from Hillier & Sons, Winchester, England, plants of *C. saluenensis*, one of *C. cuspidata* and one of *C. pitardii*. These, Mr. Smith says, are to his knowledge the first importations of these species to the United States. At the time they were mere curiosities and no one realized their potential value in hybridizing. When the first English hybrids arrived a few collectors added them to their collections without much enthusiasm, the blooms being far from spectacular. The Williamsii hybrid DONATION was the first one which created a real stir and stimulated imaginations. It was soon followed by Prof. E. G. Waterhouse's chance Saluenensis seedlings, first the MARGARET WATERHOUSE, then LADY GOWRIE and E. G. WATERHOUSE, and finally in 1948

by the successful importation of twenty varieties of the magnificent Yunnan Reticulatas. These happenings opened new horizons to the camellia world and aroused fresh incentives among devotees.

One of the very first men interested in inter-specific pollination of the genus *Camellia* in the United States was Mr. K. Sawada, a famous horticulturist from Mobile, Alabama. Mr. Sawada reports to this writer that he started hybridizing with camellia species in 1947. His first trial was between *C. sasanqua* and *C. japonica* in an effort to improve the sasanqua flower and create more varied forms. Early bloomers such as DAIKAGURA and ARE-JISHI were used in the process. A few seeds were obtained but this experiment was not found satisfactory since none of the resulting hybrids had outstanding flowers. In 1951 he tried the cross *C. sukiya* X *C. japonica*, this in the hope of capturing the sweet scent of the *C. sukiya* and imparting it to the resulting hybrid. This trial also proved to be a failure. In 1950 he received a plant of *C. fraterna*, which he found exceedingly charming with its tiny, dainty blooms cascading along the bowerlike stems—"My ambition was to convey these desirable characteristics to new hybrids that would have better blossoms." After many disappointments he finally obtained in 1955 a lovely hybrid of *C. japonica* AKEBONO X *C. fraterna*. The flower is two to two and a half inches in diameter, bell shape, sometimes single, sometimes semi-double and occasionally peonyform. The delicate shadings of the almost transparent corolla run from deep pink on the petal edge to lighter pink ending with pure white at the base of the stamens. It was introduced two years ago under the name of TINY PRINCESS and is a fine addition to any garden as it combines grace and profusion of blossoms with cold hardiness. This past season Mr. Sawada had another promising seedling from the cross *C. japonica* DR. W. G. LEE X *C. fraterna*. He is now attempting new experiments with these two hybrids.

HYBRIDIZATION IN THE U.S.A. (Continued)

C. saluenensis has been used as a parent by many U. S. hybridists but judging by the slides recently sent to this country showing Mr. Les Jury's spectacular *Saluenensis* hybrids so varied in colorings and also by the comment of Mr. Ralph Philbrick upon his return from New Zealand praising the color range Mr. Jury has obtained "running from pale pink to maroon red," we are not obtaining the same desirable results. This fact may be due to different varieties of the species used in New Zealand and not available to us.

From a lovely *C. saluenensis* hybrid however (*C. saluenensis* X *C. cuspidata*) named SYLVIA MAY several hybridists are producing very outstanding new flowers over here. It is a seed of x SYLVIA MAY which gave x ROBBIE to Mr. Vernon James, a noted hybridist from Aptos, California. ROBBIE is a chance seedling of F₂ ancestry. Mr. James writes that the irresistible beauty of this chance seedling aroused his interest in hybridizing. ROBBIE is a four and one-half inch wide semi-double bloom with slightly wavy and dainty petals of a pleasing orchid-pink coloring. The variegated form of this flower offers a delicately blended moire-like pattern of light pink and white highly prized by many. Indeed, it is a parent of distinction and it is small wonder that it gave birth to a number of fine offspring (F₃ hybrids). Prominent among these are the x JIMMY JAMES (ROBBIE X *C. japonica* THELMA DALE), a five-inch soft orchid pink incomplete double with crinkled inner petals, x JULIE, a four and a half inch soft pink shaded light to solid salmon on the petal edge, x EDNA RALEY (ROBBIE X ROBBIE) four and a half to five inches in diameter, flesh pink, incomplete double with white stamens, x DOROTHY JAMES (DR. TINSLEY X ROBBIE) formal double with sixty-five petals, four and one-half inches wide, with long narrow petals each tipped salmon pink.

Mr. James reports that he has many fine but yet unnamed hybrids including one the bloom of which has measured as much as six inches in diameter, an incomplete deep rose fluted much like *Reticulata Butterfly Wings*, but with deeper

veining in the petals. Mr. James admits that he has difficulties in creating red hybrids from *C. Saluenensis* parentage. However he reports having successfully flowered a few bright orange red ones. His primary purpose is not to seek novelties but to create hardy hybrids. For this reason he is not interested in using *Reticulatas* in his hybridizing program.* In an article which he wrote for the 1961 ACS Yearbook he emphasizes the desirability of exhibiting entire hybrid plants at Camellia shows instead of mere specimens, this to enlighten people about their true value as ideal ornamental shrubs.

The Pacific States are no doubt the leaders in the field of hybridization in this country. Besides Mr. Vernon James there are several other dedicated hybridists. Prominent among them is Mr. D. L. Feathers of Lafayette, California. Mr. Feathers recognized early after starting to grow camellias the advantages of planting seeds from promising parents and recording their identity. A seed of x SYLVIA MAY given to him by a friend produced for him the beautiful putative hybrid MONTICELLO—a loose peonytype, high centered medium large four and a half inch bloom. The corolla is composed of about forty petals of a pleasing light rose with no trace of the orchid tint generally inherited from *Saluenensis* ancestry. It was not long until Mr. Feathers' curiosity became aroused to the point when he simply had to know both parents and furthermore these had to be of his own choice. For several years now he has been doing controlled hand pollination obtaining fine results. Being a very systematic and determined man he crosses and re-crosses until he finally captures the characteristics he desires in his hybrids. Mr. Feathers has reported lately the following successful crosses:

C. reticulata BUDDHA X *C. fraterna*,
C. japonica BERTHA HARMS X *C. reticulata* CRIMSON ROBE, *C. saluenensis*

*It is reliably reported that FLUTED ORCHID, a *saluenensis* x *reticulata* hybrid, last year survived zero temperatures that killed *C. rusticana* outright.—Ed.

IMPRESSIONS OF AMERICAN CAMELLIA CULTURE

A. W. Jessep, Melbourne, Australia*

During the past fifty years cultivation of the camellia has received much more attention than ever before. This renaissance of the camellia commenced in the United States and soon spread to Australia and New Zealand. Although considerable activity has been shown in other countries, the honor of being the leaders in the camellia world undoubtedly goes to the American growers. In that great country camellias are grown over a wide range of climate and soil conditions. Some growers go to great lengths to have success with these plants and much time and money are spent in growing them under largely artificial conditions. Elsewhere in the world other plants more suitable to the environment would have been chosen but these enthusiasts wanted camellias and camellias were grown, notwithstanding. Although the blooms generally are not as large as in the more congenial areas a great deal of interest is devoted to camellias and much satisfaction obtained from their culture. In the private collections, the high quality of the plants was very noticeable. The public gardens and nurseries were of the same high order, particularly with the newer plantings, such as in the Bellingrath Gardens near Mobile, Alabama, where a large camellia collection is being established. The older gardens, such as the Huntington and Descanso Gardens in Southern California, are invaluable as a source of information and to permit inspecting a collection of old as well as the up-to-date varieties.

When speaking of hardy varieties it was noted that it usually referred to the ability to withstand frost and cold conditions, whereas with us it refers to the hardiness when growing in the sun. Your plants were often protected from both sun and cold by using evergreen trees such as *Quercus agrifolia*, *Q. virginiana* and *Pinus halepensis*. The name "Live Oak," given to the evergreen oaks, was new to me and the name seems to be confined to America. In Australia, we use deciduous trees which protect the camel-

lias from the summer sun but allow the winter sun to get to the plants. Cold is no problem with us. The leaves from the deciduous trees make a good natural mulch. It appeared to me that the private grower in America puts more thought and work into the preparation of the planting area than in our country where, probably, our problems of plant growth are not so urgent where camellias are grown.

The control of diseases is more important with you as we have no petal blight and most likely not the true dieback. We certainly get some dying back but it is thought to be a cultural condition, as no dieback organisms have ever been isolated by our pathologists. The shattering of petals is not a problem and often the area around the old trees is a mass of spent blooms, which is attractive to some of our growers, but I think this untidiness shocked some of our California camellia visitors. Having seen the result of this dreadful petal blight disease in America and noting the labor that is involved in trying to control it, it is obvious why varieties whose blooms shatter are not wanted by some.

The competitive shows were arranged with the classes for cultivars in alphabetical order, which makes it less difficult for the judges and enables the visitors to locate and study any cultivar that is in the show. This eliminates separate naming of the blooms when they are staged under a schedule based on form classification of the flowers. This cultivar judging method is gradually replacing our older method of judging blooms by classes, according to form, which served its purpose when our members had only a few plants and the names of some of them were not well known. The disadvantage, if any, of judging cultivar classes in small shows is not the system but one involving the personal element. Except in popular classes many were restricted to from 1 to 4 entries, with little or no

**Curator emeritus Melbourne Botanical Gardens.*—Ed.

HYBRIDIZATION IN THE U.S.A. (Continued)

X *C. japonica* SEPTEMBER MORN, *C. japonica* WATERLOO X *C. japonica* DEBUTANTE (a seedling of his) X *C. reticulata* CRIMSON ROBE, *C. japonica* LADY VANSITTART X *C. reticulata* CRIMSON ROBE, *C. saluenensis* X *C. Hongkongensis* and a *C. japonica* LADY VANSITTART seedling (F₂) X *C. reticulata* CRIMSON ROBE.

Among Mr. Feathers' earlier interesting originations are the dainty x CALIFORNIA SNOW with gracefully curving branches along which grows a profusion of small white single blossoms often tinged pink. This is a x SYLVIA MAY chance seedling and it is a prized ornament in any garden. His x FLUTED ORCHID (*C. saluenensis* X *C. reticulata* CRIMSON ROBE) as the name indicates resembles slightly an orchid in the arrangement of its few petals which are elongated, delicate in texture and tinted pale pink, some twisting upward.* Among Mr. Feathers' hybrids available now from nurseries besides x MONTICELLO and x FLUTED ORCHID are x ROYAL ROBE, x CRESTA BLANCA, and FAIRY WINGS, all three the result of crosses between an unnamed seedling of *C. japonica* WATERLOO X *C. japonica* DEBUTANTE with *C. reticulata* CRIMSON ROBE the pollen parent. x DIAMOND HEAD, also available, is a fine hybrid of LADY VANSITTART X *C. reticulata* CRIMSON ROBE. "Hybrids," writes Dave Feathers, "are so superior to Sasanquas that I feel they eventually will supplant them as ornamental shrubs especially if we are able to develop real early bloomers." Believing that many camellias may already be the results of many generations of natural hybridization, which he thinks might explain the ease with which they mutate and why they rarely breed true from seeds, he further advises more boldness on the part of amateurs. "No one seriously inclined in that direction should be deterred from trying even the most unpromising or unlikely combinations in camellia hybridization." . . . "There may be more compatibility inherent between given species than we imagine. Certainly one should not let

the fact of a difference in chromosomes dissuade him, for it has been pretty well established that this is not an insurmountable obstacle."

Another eminent hybridist of the West Coast, Mr. J. Howard Asper, is superintendent of the famous Huntington Botanical Gardens at San Marino, California. A few years ago Mr. Asper reported the origination at the Huntington Gardens of an interesting new hybrid, a cross between *C. Pitardii* var. *Yunnanensis* and *C. reticulata* CHANG'S TEMPLE. This beautiful hybrid was named CARL TOURJE, after the distinguished editor of "CAMELLIA CULTURE," a book published a few years ago in California. x CARL TOURJE is a five-inch semidouble bloom of silvery pink coloring with lighter and darker shadings. It will be released to the nurseries this Fall.

Mr. Asper writes that according to his own experience certain varieties of the Yunnan reticulatas set seeds freely when pollinated. Among these he names CRIMSON ROBE, LION'S HEAD, CHANG'S TEMPLE, NOBLE PEARL and TALI QUEEN. He also mentions that reticulatas can easily be crossed among themselves. In fact his much-talked-about putative hybrid WILLIAM HERTRICH is a living example of this assertion since he has no doubt that both parents of this seedling are Reticulatas although the only one he definitely knows is the seed bearer LION'S HEAD. WILLIAM HERTRICH, named after the distinguished former curator of Huntington Gardens, is 7 to 8 inches in diameter and four inches in depth, a red blossom with numerous petals curling and twisting in the same manner as those of most Reticulatas. The leaves are dull, waffled and disposed sparsely on the stems. This very beautiful and outstanding seedling is to be offered this Fall to the public.

Mr. Asper does not think that much success can be obtained by using *C. reticulata* pollen on *C. japonica*, that the reverse is much more rewarding. Besides his absorbing work at the Huntington Gardens Mr. Asper devotes his spare moments to raising his own camellias on

* See footnote on page 4.—Ed.

MICRO CLIMATES AND CAMELLIA HEALTH

J. Carroll Reiners, Sacramento, California

The purpose of this article is to point out the importance of factors influencing heat, light and humidity relative to camellia culture, with emphasis on prevention of leaf burn in warm dry climates. Most of us have noted apparent inconsistencies in camellia leaf burn. Why do camellias in some locations of less sun exposure burn, while others tolerate apparent higher sun intensities? There has to be a logical explanation of this. The subject matter which follows deals with conditions causing leaf burn as well as those which prevent leaf burn of camellia.

The influencing factors of atmospheric and sun intensity affecting leaf burn include the following:

1. Light intensity.
2. Temperature.
3. Constant exposure to full sun.
4. Intermittent exposure (sun-shade-sun-shade) as created by trees and structures.
5. Degree of humidity in the atmosphere surrounding the plant.
6. Wind velocity.
7. Intensity of reflected light and heat from walls, pavements and earth.
8. Soil, mulches, and other vegetative factors which influence local air humidity.

Generally, the accepted method of promoting good camellia culture and preventing sun burn is through the use of shade—overhead structures, trees, and northerly exposures. Frequently, too much light is shut out in order to prevent sun burn and the plants become rangy and of poor health from insufficient light. The control of sunburn by an overhead structure which limits light by sunshade ratios is never too satisfactory. The degree of shade from the structure stays constant but the heat and weather varies—there is no flexibility nor compensating relationship between these factors, such as more light on cool days or less light on hot days, so that the camellias may receive an optimum condition at all times. It is well known and an established fact that camellia plants do best when they get maximum

light just short of burning the foliage.

In June, 1961, many sections of California had a rather devastating occurrence of unseasonable weather, combining high temperature, low humidity and wind. Camellias and other plants were badly burned. In some areas, plants in presumed protected locations, including plants under lath, were scalded. However, there were instances where no damage resulted even though the sun exposure was extensive. The analysis which follows explains this seeming inconsistency.

WHY DO CAMELLAS BURN?

Water constitutes about 75 to 90 percent of plant tissues. The maintenance of an abundant supply of water in these tissues is essential for the life and growth of the camellia. Only a very small fraction of the water which enters the roots and passes upward through the plant to the leaves is used in the plant's synthesis of foods and other organic compounds. The remainder is evaporated from the leaf. During the warm weather of the growing season a constant stream of water is thus passing through the plant from root to leaf. The total quantity of this water amounts to several hundred times as much as the dry weight of the plant itself. Excessive water loss is an ever-present danger to any plant but particularly so to the camellia.

Transpiration is the evaporation of water from the aerial parts of plants, especially the leaves. This process goes on at all times, except possibly when the air is saturated with moisture during or immediately following rains or overhead irrigation. The quantities of water lost by transpiration are often incredibly great. The principal external factors above ground which influence the rate of transpiration in plants are light, temperature, wind, and humidity. Transpiration is more rapid in bright light than in diffused light or in darkness, partly because certain light rays raise the temperature of leaf cells and thus increase the rate at which water is transformed into vapor. High temperatures favor

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HYBRIDIZATION IN THE U.S.A. (Continued)

a ranch he owns about one hundred miles south of Los Angeles. There he gives himself wholeheartedly to his cross-pollination and hybridizing, favoring the use of *Reticulatas*. In the past few years startling results have been reported by those fortunate enough to be close to this rather unassuming man. We recently heard of a fabulous new hybrid of his—a *C. reticulata* LION'S HEAD X *C. japonica* CORONATION cross of unbelievable size and beauty. In a letter to an old friend Mr. Asper was moved to write about this seedling: "The plant of LION'S HEAD X CORONATION had a bloom last Friday which had everybody turning cartwheels. . . . If only you could see it! Seven and a half inches in diameter and almost four inches high. The inner petals are all undulate as in the *Reticulata*. . . . I sincerely believe that this marks the beginning of a new era in camellia history. Dr. Lammerts* believes that the flower and plant resulted from a very unusual combination of genes."

The only Asper hybrid available to date in the nurseries is FELICE HARRIS (*C. sasanqua* NARUMI-GATA X *C. reticulata* putative hybrid BUDDHA), an F₃ hybrid with a beautiful four and a half to five inch semidouble fluffy blossom delicately colored a light pink. It is a fine grower and proved cold hardy in the Southeast when the temperature dropped below 10 degrees Fahrenheit last winter. (See footnote Page 4.)

Before leaving the West Coast mention should be made of two people who after years of hybridizing are now beginning to obtain interesting rewards. One of them, Mr. Edwards H. Metcalf of San Marino, California, is already well known in New Zealand camellia circles where he made many friends a few years ago. This writer is not too well acquainted with the progress made by Mr. Metcalf in hybridizing. However through the kindness of Mr. Joe Pyron, secretary-editor of the ACS she recently had the privilege of admiring three of his hy-

brids on slides, among them a most unusual one which he calls GALAXIE, a *C. Saluenensis* X *C. japonica* cross. The picture reveals a most peculiar formation of the pale pink corolla showing darker shadings on half of the petals and also on their slightly rolled upturned edges.

The other conscientious and dedicated amateur hybridist of whom mention should be made is Mrs. Al E. Johnson of Beaverton, Oregon. This writer has followed with deep interest the progress Mrs. Johnson is slowly making while improving her crosses constantly. She has not up to date obtained any spectacular flowers but has made some very promising crosses among these: x MARY CHRISTIAN X *C. cuspidata*, *C. japonica* GIGANTEA ALBA X *C. rusticana* wild form, x MARY CHRISTIAN X *C. japonica* PINK SHADOWS, all F₃ hybrids. These bore flowers for her and she is now using them for further attempts at obtaining better blooms, especially blooms that will withstand the rigors of the Portland, Oregon, winters where her home is located.

Retracing our steps across the continent and not mentioning any other hybridists among the nurserymen as well as other skilled amateurs of the West for lack of proper knowledge about their accomplishments, we are now returning to the Southeast in order to note the recent experiments of a man whose sole interest in the genus *Camellia* is the creation of hybrids. To him a new camellia variety's worth is to be judged not according to its size or even the perfection of its corolla but according to its own parentage and its potential value as a parent. He is Dr. P. L. Hilsman of Albany, Georgia, a man with a scientific turn of mind and who appears to have made quite a study of plant genetics. He owns a large collection of *Camellia* species as well as some other members of the Theaceae family (*camellia* relatives) such as the *Tutcherias* and the *Gordonia anomala axillaris*. Dr. Hilsman recently reported to this writer having obtained the following hybrids, some of flowering size: *C. japonica* CHRISTINE LEE X *C.*

*Dr. Walter E. Lammerts—eminent geneticist, creator of the Lammertsii hybrid (*C. japonica* X *C. cuspidata*.)

IN WHICH YOUR EDITOR WANDERS

When I was a little boy, which does not seem a great many years ago but actually is, the one place above all others in the world that I wanted to visit was the South Seas—those dream islands of the Pacific so storied in word and picture. When the opportunity to do so for the first time in my life presented itself this year, with the added prospect of satisfying another yearning desire with which I have been beset somewhat more recently—that of seeing first-hand the camellias of Australia and New Zealand—the lure was irresistible, especially when our good friends, Milo and Agnes Rowell of Fresno, California, thought as we did that it might be more fun for all of us to go together. And so it was that we left Los Angeles on the night of July 13th and, before returning home nine weeks later, visited Tahiti, Fiji, Australia, New Zealand, Samoa and Hawaii, in that order.

The tropical islands were wonderful but, as was the case when we sampled our first ripe coconut freshly picked, the long years of anticipation (and the jet plane age, perhaps), caused the realization to fall a bit short. Even "the twist" had penetrated this far! It was, nevertheless, an enjoyable and unique experience, for all of these islands of the Pacific have a charm and fascination about them which the natural friendliness of the people accentuates. But Australia and New Zealand—ah, how can one adequately describe a place where everything is absolutely delightful, except for the fact they drive on the wrong side of the road and pronounce an "a" like an "i"!

This being not a tourist guide but a camellia publication, let us forget for the moment the magnificence of the Sydney Harbor and the beauty of the city and its homes and gardens, the quaint charm and lovely setting of Adelaide, the majesty of Melbourne, the breath-taking grandeur of the South Island of New Zealand and the consummate loveliness of the North Island. But we can never forget, even for a moment, the absolutely delightful people we met everywhere; for, in the final analysis it was the people

we met, their accomplishments and warm hospitality, that made our trip such a complete success.

In the Sydney area we were much at home (and constantly treated that way) not only because we were made to feel so welcome and to "belong" but by reason of the fact the city itself and the climate remind one so much of San Francisco and the Bay Area. Its many hills and lovely inland waterways and beaches—but then I promised not to make this a travelogue! What I wish to convey is that the cultural conditions for camellias are quite similar to those of our own area, with about the same average rainfall though less seasonal and perhaps a little less temperature range between summer and winter. Frost is normally not a problem.

We were greatly impressed with the performance of *C. reticulata* "CAPT. RAWES," which seems to be almost universally grown in the ground. Perhaps this accounts for the better plant and foliage and the much heavier florescence which may have given rise to the notion that theirs is a different *reticulata* than ours. It seems fairly obvious that they are one and the same camellia and any difference is probably due to cultural practices, climate and soil. In New Zealand this difference is even more pronounced. There we saw the most magnificent plants of "CAPT. RAWES" ever (see Fig. 3) and the vigor and rapidity of growth of both this plant and the "ROBERT PEEL" rhododendron, which we saw everywhere, are almost unbelievable. On one short street in Rotorua, N. Z., the writer counted 27 magnificent trees of "ROBERT PEEL" growing as curb strip plantings almost unattended, the largest of which was a full 2 feet in diameter at the base and about 25 feet tall, round and perfectly formed, which must have borne thousands of blooms. The year-around rainfall and plenty of it, combined with volcanic well drained soil, makes gardening easy.

We saw many fine old trees, including the original plantings at the old MacArthur estate at Camden Park, south of

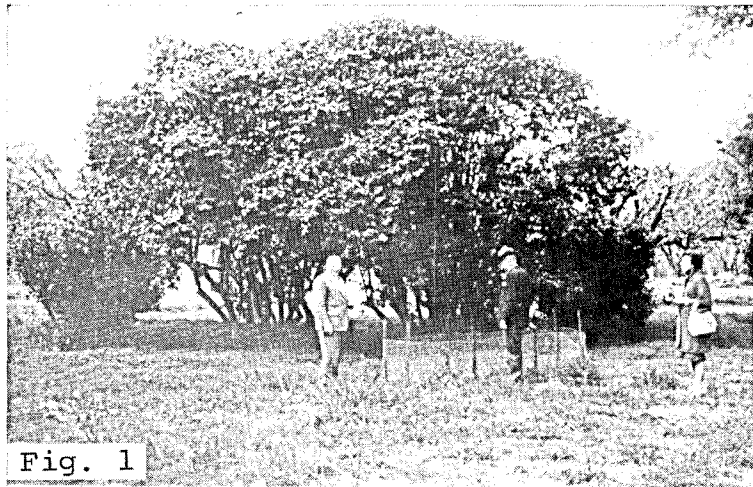


Fig. 1

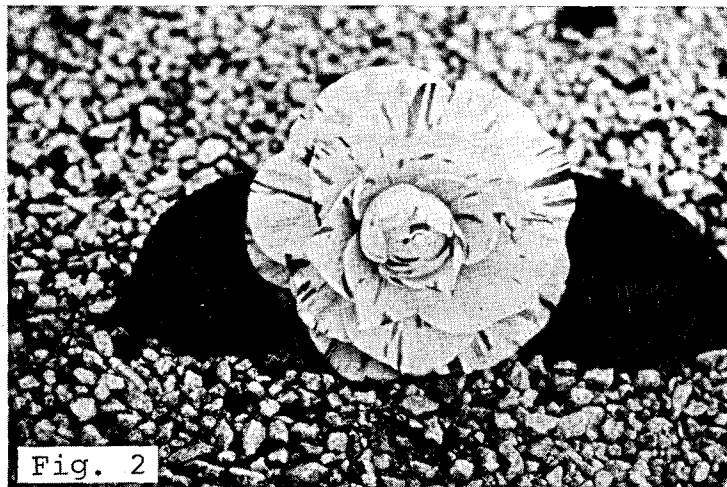


Fig. 2



Fig. 3



Fig. 4

(1) Mr. F. A. Varley, Manager Camden Park Estate, the author and Mrs. Rowell, at open field planting of original MacArthur camellias, showing pruned and unpruned trees. (2) *C. japonica* CONTESSA LAVINIA MAGGI. (3) Dr. and Mrs. W. R. Fea of Hamilton, N. Z. and their magnificent specimen *Reticulata* CAPT. RAWES. (4) The National Camellia Show at Hamilton, New Zealand (main floor).
— Photographs by Milo E. Rowell



Fig. 5

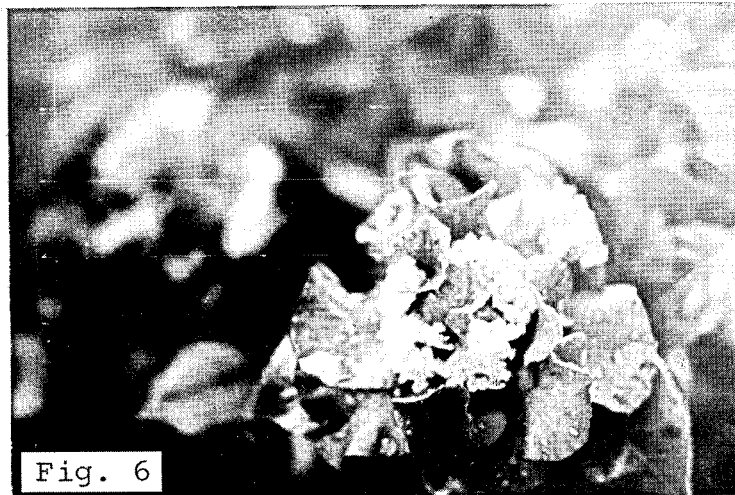


Fig. 6

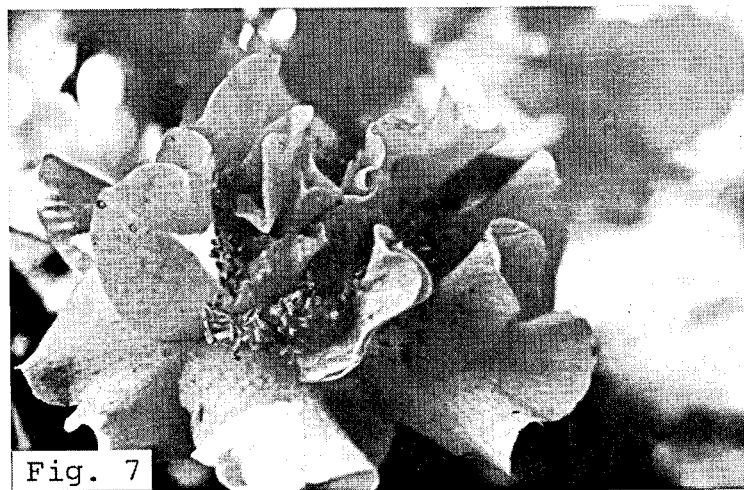


Fig. 7

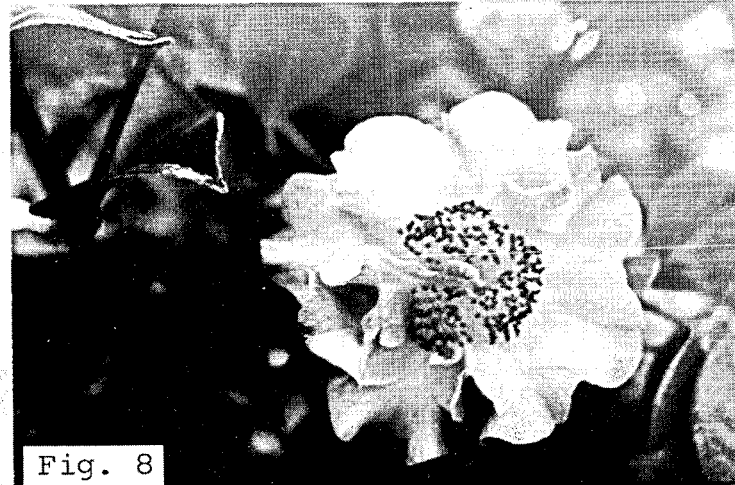


Fig. 8

(5) Hybrid camellia **ELSIE JURY**, a lovely rich pink anemoneform. (6) Brilliant red Hybrid, cross of **Saluenensis SUNNYBANK** x **Japonica SOMERSBY**. (7 & 8) Two very attractive "winged" forms of Hybrid, from cross of **Saluenensis SUNNYBANK** x **Japonica HERME**.
— Photographs courtesy Mr. Ben J. Rayner, Stratford, N. Z.

Sydney, where the famous "ASPASIA MACARTHUR" (*Paeoniaeflora*) and its many sports originated, as well as other well-known japonicas. There were some really magnificent camellia trees in a churchyard and a larger planting in a graveyard in the town of Cambridge, between Rotorua and Hamilton, N. Z. Some observations may be in order here. One could not help noting the similarity in environment (and performance) between the Camden Park camellias and those at the old Edinger Place at Hood (near Sacramento) California. Both plantings are in silt soil, about the same distance from a river and in the open sun. It seems obvious that the roots in each case reach down into soil that is continually moist (undoubtedly by reason of sub-soil irrigation from the river) and thus insure the plant of continuous moisture and ample nutrients—the main essentials for a camellia's well-being. The climate in both places is quite comparable, including the rainfall.

So many of these priceless old camellias seemed to be neglected. The Camden Park Estate is now primarily an immense, mechanized dairy farm and is gradually becoming a residential sub-division, at least in part. It is only natural that these old camellias, now in a rather isolated location with reference to the habitations, should be to some extent the victims of the "out of sight out of mind" truism. As a result, there had been some decline and a year or so ago Mr. Walter Hazlewood was consulted. It was his view that the trees would benefit from heavy pruning and so about a half dozen were cut back to within a few feet of the ground, limbs several inches thick being removed (see Fig. 1). When we saw the plants, innumerable new, strong shoots had grown out of the limb stubs and these camellias were taking on the appearance of restored vigor and a healthy, bushy structure. Such severe pruning was new to me and, while one should always qualify his cultural observations about camellias according to the environment in each case, it would seem safe to say that, given a salubrious climate, ample moisture and good drainage, old camellias which show decline might be expected to benefit

from what might seem to be harsh cutting back. In any case, this experience brought home a conviction that the general tendency is to spare the shears to a fault.

When one examines the character of the soil that is prevalent in so many of the camellia-growing areas of Australia and New Zealand—especially the latter—it is readily understood why ground culture predominates to such an extent. So often blessed with such ideal, well-drained soil and without the serious problems posed by the presence of rodents such as gophers, moles and field mice, and with year-around rainfall to boot, as well as a much less prevalent space problem, it is readily understandable why container culture is largely confined to the residential sections of the larger cities. Furthermore, wooden tubs are much more difficult to come by and, in consequence, concrete tubs up to 30" in diameter are more common, especially in Sydney. The camellias seem to do very well in such containers, which are round, tapered and ornamental, and it must be said that one distinct advantage is that the weight is such they do not blow over so readily in heavy winds. However, their heaviness becomes a disadvantage when it comes to handling, as the larger ones must weigh several hundred pounds. It seems to be fairly common practice to top dress the tubbed camellias with lumpy manure and we saw innumerable beautiful specimen camellias so grown.

This brings up the point of mulching and fertilizing techniques. We were a bit surprised to see such widespread use of sawdust and mill waste as top dressing throughout the garden—camellias, azaleas, roses, bedding plants—in fact, just about everything in the garden seemed to have sawdust inches deep around it, generally supplemented with sheep manure, which is so readily available and inexpensive. In some places near the coast we saw something new—a dried seaweed mulch—which seemed to do the job real well and keep out the weeds. In addition to animal manures (and, in some cases, supplementing them) liquid fertilizers were employed in order to offset the nitrogen-robbing sawdust, but

one can readily imagine what an ideal combination sawdust and sheep manure make and we only wish they were as easily obtainable here.

In Australia, we saw at least a half dozen new (to us) camellias that were quite desirable including a single two-toned *reticulata* (either seedling or wild form) that was charming. Among such japonicas that we particularly admired were COUNTESS LAVINIA MAGGI (a large, variegated double—see Fig. 2), ALEXANDER BLACK (a bright red double), FRANCOIS WIOT (an interesting red semi-double having eye-catching variegated foliage), W. R. GUILFOYLE, CALDER'S TREASURE (a fine new pink), DAINTREE SIEVERS, STORYII NEW PINK, ROSEMARY ELSOM, GAY MARMEE, HIGH JINKS (an unusual variegated formal), MARIE RAVEN and WM. HONEY (a large, attractive variegated). Among the older hybrids the writer had not previously seen, we liked CRINKLES and DR. LESLEY. The mention of hybrids brings us to the Taranaki area of New Zealand—one of the high spots of our entire trip—as this is the focal point of camellia hybridizing in the Antipodes.

The drainage area of Mt. Egmont, an 8,200 ft. volcanic, snow-covered cone of striking beauty located in Taranaki Province, about midway between Wellington and Auckland in the North Island of New Zealand—especially the western slopes which run gently down to the sea—is one of the finest natural horticultural regions anywhere. It is blessed with an equable climate and copious rainfall, ranging from perhaps 40 inches to as much as 160 inches per annum, distributed throughout the year. The principal city in this area is New Plymouth which, with its environs such as Stratford and Waitara, are centers of great floricultural activity. The very large and extensive growing grounds and plants of Duncan & Davies, Ltd., the principal nursery in New Zealand, are located here and, higher up on the western slopes of Mt. Egmont at an elevation of about 3,000 ft., is the immense Pukehiti Trust estate, a privately endowed natural garden project for public benefit now in course of

development, specializing in the native flora and rhododendrons, with an important and growing planting of camellias. The soil in this entire area derives from volcanic action and is reddish, indicating the presence of iron, and porous. It drains so well that, when cuts are made for roadways or the ground is naturally steeply sloping, the banks do not erode even when almost vertical. As may well be imagined, root penetration and water retention are superb and, with the ample rainfall and humidity, in conjunction with a temperate climate, plants of all kinds grow very readily and vigorously; in fact, the writer recalls seeing fence posts cut from green timber which were growing new branches and evidently had taken root!

Two of the eminent hybridists of the world—brothers—live in this area, Mr. L. E. (Les) Jury at New Plymouth and Mr. F. M. (Felix) Jury, at Waitara, just a few miles distant. Both of these gentlemen are first-class botanists and plant collectors and both have to their credit fine hybrids of plants other than camellias—notably, Les Jury's extremely beautiful *Lilium auratum* hybrids and Felix Jury's excellent double-flowering *Prunus*, among others. I believe either or both of these gentlemen also has developed some fine rhododendron hybrids, as well. It is rather remarkable to find two members of one family with such similar tastes and accomplishments.

At Felix Jury's we saw a fabulous garden containing many rare and exotic plants. Camelliawise, what was unquestionably the finest specimen plant of *C. tsaii* the writer has seen—some 6 ft. tall, bushy and heavily laden with entrancing bell-shaped flowers—upgraded his opinion of this species (and small-flowered camellias generally) tremendously.

While we had had a fairly good preview of the best of Les Jury's camellia hybrids at the Hamilton, N. Z., national camellia show, where one of his creations was awarded Best Flower, we were in for quite a surprise when we were driven into his concealed garden at New Plymouth, which was completely different from anything the writer had ever seen. If, as has been said, an individual's gar-

den is a reflection of his own personality, then the Les Jury garden is expressive of a person possessing great ingenuity, a love of beauty and that which is unique—with a yen for complete privacy very much evident. Because it was still winter, we did not see this garden at its peak and one can only visualize what it would look like in spring. Set in a deep basin resembling an amphitheater open at one end, in the bottom of which is a small lake with a plant-covered island, the sloping banks are covered with camellias, azaleas, rhododendrons and flowering trees, set off by beautiful tree ferns, and the terraces heavily planted with perennials of many kinds. The entrance is completely concealed from the street and it is really breath-taking to come upon this sunken garden, with the whole panorama unfolding at once. The home is positioned so as to have a complete overall view at all times.

The Les Jury hybrids derive largely from a garden form of *C. saluenensis* he calls "SUNNYBANK," which has the typical single flower but of a deeper hue and slightly larger than the pale pink form of *saluenensis* with which the writer is most familiar. His better hybrids have come from pollinations of this seed parent with various japonicas—"JULIA DRAYTON" (our "MATHOTIANA"), "DEBUTANTE," "HERME," "DAIKAGURA"—just to name a few. These largely run to shades of lavender-pink, many are compound and they are almost uniformly of good size. From crosses in which pollen of "AUSTRALIS" and "SOMERSBY" was used, some very fine, bright off-red shades have been developed in semi-double forms, a few of which have loose peonyform structure and considerable height, making a winged and very handsome overall effect. (See illustrations on Page 11.) In this particular field (the *saluenensis* x japonica hybrid) it is the writer's opinion that Mr. Jury has the widest range and best developed hybrids extant. He has also made a great many combinations involving other species but most of these are yet to bloom. Les Jury is a dedicated person with an intense interest in his subject and a background of accomplishment in hybrid-

dizing. It is this writer's prediction that a wide array of unique camellia hybrids will come from his garden within the next few years, supplementing his already impressive contributions.

No account of our travels would be complete without mention of the camellia shows we attended—at Sydney, Melbourne and Hamilton, N. Z. (see Fig. 4). These shows were uniformly good and largely non-competitive, reflecting a great deal of originality and having as the central motif what all camellia shows should have as their prime objective—an educational and artistic exhibit. Only in the Hamilton Show were there competitive exhibit classes and these were relegated to the mezzanine section, the main floor being devoted almost entirely to the displays and non-competitive blooms. The writer gained the impression, however, that the competitive bloom section is gradually being expanded. This brings up again the old question as to which is preferable—a competitive or non-competitive show.

Perhaps a few personal impressions on this point might be of interest. Having now seen most of the outstanding camellia shows of the United States and the Antipodes, it is the writer's conviction that the ideal arrangement is neither, on an exclusive basis, but rather one which combines both in such degree as best fits the attitude of the exhibitors in each area. That is to say, if the growers in a certain section prefer merely to exhibit rather than compete, the emphasis should be upon the non-competitive concept and, by the same token, where the growers are keen about prizes and awards that angle should be emphasized. In either case, however, it would seem that something vital would be lacking were the other aspect completely omitted. The writer has had wide experience in both competitive exhibiting and in merely displaying courtesy collections of blooms. There are valid arguments on both sides, e.g., it is widely acknowledged that competition—in any field of endeavor—develops perfection to the utmost: it must be equally admitted, however, that there are many persons who should be en-

(Continued on Page 20)

OBJECTIVES OF HYBRIDISTS — AND OTHERS

Roy T. Thompson, Glendale, California

There are a great many amateur hybridists who are interested in producing new camellia varieties, most of whom, like myself, have never formulated a purposeful program of hybridization simply because they did not have the facilities. When asked the other day what would be my objectives were I to take up such a program, I soon realized that the question was a reasonable one, and I further realized that most of the objectives sought by a hybridist might also be used by any collector in building his collection. The following is not a complete list, but may stimulate a little thinking on the subject.

1. *Healthy, vigorous plants.* After three decades of camellia growing I am firmly convinced that the first requisite of a camellia is vigor and good health. This is fundamental. A beautiful bloom on a weak, hesitating plant does not satisfy. Over the years any camellia plant is bound to have strains and tensions, maybe severe trials, due to temperature, lack of water, lack of light, hardening soil, or what not. It should have a vigorous constitution to meet these emergencies, not to mention the main business of producing good blooms.

2. *Plant should be attractive.* Distinct from the matter of health, a camellia plant should be good looking. A vigorous, healthy plant that is rangy, awkward and shapeless, has no place in the garden. The foliage should be fairly compact, of an attractive—not yellow—green. There are big, stiff, coarse leaves and droopy, tired leaves, but these should be avoided. One of the outstanding characteristics of a camellia at its best is its suave, well-bred, polished air of being well dressed; good japonicas somehow have an air of distinction.

3. *Something really new.* A camellia which is only slightly different from a named and established variety does not deserve to be propagated; it should be distinctly different, with a difference that is easily recognized. No serious student of camellias in America, and certainly no

nurseryman, will deny that there are too many varieties on the market today. Take the big semi-double whites, for example. Put a hundred blooms of the leading whites on a table, without labels, then ask your leading expert to identify them. Hence, it is important for the hybridist, amateur or professional, to make sure that his new production is really different.

4. *Something that has style and character.* It is difficult to define these terms, but the many successes of modern art—which is based on form, line, color and the juxtaposition of these without any attempt to reproduce objects or people—illustrate that human emotions can be aroused and directed by mere line, color, or form. Hence, the combination of these elements in a flower produce what we call its character. But sometimes the combination of these elements produces little or no effect on the emotions; then we say that the flower has no character. An outstanding camellia is one which instantly produces a distinct sense of character on the viewer. Style is another word which we used for the distinct and pleasurable arrangement of the elements of line and color in a flower.

5. *Best effects call for the correlation of color and form.* There is always a working relation between a flower's form and its color. Some flower patterns suggest vigor, action, movement, as in the big-petalled semi-doubles where individual petals stand out at dramatic angles. These look best in rich reds or deep pinks. Formals are made of endlessly repeated curves lying close together and these suggest peace, quiet, tranquility. White, or light pink, suits these best.

6. *Long lasting flowers.* Another aim for the creator of camellia varieties might well be longer lasting flowers. Some existing kinds have this quality, but most could be improved.

7. *Flowers that do not shatter.* No hybridist should be "permitted" to produce a flower that shatters. Aside from the dangers of petal blight and the business of picking up petals, a shattering flower

(like C. M. Hovey) is an unsightly nuisance in the garden.

8. *Extending the blooming season.* Thought should be given, too, to extending the blooming season at both ends—early and late.

It would seem that the semi-double type offers by far the greater number of opportunities for new varieties. In this group, individual petals count for more and can be more creative in producing a greater number of combinations than in any of the other types. In peonies, the petals tend to be crowded tightly together and the play of individual petals is limited. In formals, the pattern is still more rigid and limited. Semi-doubles have more room for unique arrangement, especially when they embody small clumps of stamens.

IMPRESSIONS OF AMERICAN CAMELLIA CULTURE (Continued from Page 5)

competition, and too often a second-rate bloom was awarded a First Prize. This may have been because it was rare, difficult to grow, or for other reasons, but it could mislead the public as to the value of the cultivar when such a bloom was awarded the maximum. However, I know of no better system and, as a judge, hope and expect that all our future shows will very soon be so scheduled.

The size of the blooms of the large semi-double sorts and the incomplete doubles was outstanding and yet not having a coarse appearance. Size seemed to be over-emphasized, whereas we probably put too much emphasis on the condition of the bloom. It was interesting to see so many miniatures and to observe that they were increasing in popularity, apparently.

The technique of grafting seemed to be better developed than in other countries I have visited—particularly the grafting-over of older plants in the open. We generally graft only rare scions and probably overcare for them, with too much wax and not sufficient air and fungicide as possibly our main problems. With more experience, however, our growers are getting greater confidence and better results.

In America, the practice of raising new cultivars and hybrids has been most successful and the camellia frater-

The single camellia, up to now, has been too much down-graded. But after the semi-double it has, theoretically at least, the most promising future. This is largely due to the aesthetic opportunities afforded by its eye-catching, round yellow center. Composite flowers, daisies for example, have been world favorites down through the ages; they are simple, they are beautiful, they are easy to understand. (Some flowers, like *Strelitzia regina*, are terrifically complicated, a little uncomfortable and hard to "understand.") Single camellias are bright, simple, easy to understand and quiet rather than exciting. In a world where psychiatrists are increasingly needed to untangle our complicated lives, simple things like singles may have a unique value.

nity everywhere are thankful that these are so readily made available. This willingness to share the good things with others has been one of the outstanding features among camellia enthusiasts. We, in Australia, owe much to the great generosity of our American friends but regret that, so far, we have had so little to give in return. Perhaps we may get the true blue or really yellow camellia and then—!

From the above you will realize that I appreciate the fact that camellia culture in the United States has given a lead to the other camellia-growing countries. This is not to be wondered at when one takes into consideration the research and investigational work that has been and is being carried out there. The American Camellia Society was initiated in 1945 and had at its command specialists in every phase of camellia culture. The result of this work was readily made available to all its members. With the local societies attending to matters having to do with regional environmental conditions, broad scientific and practical information was disseminated amongst the camellia growers. Supplementing this was the development of Research and Test Gardens, from which have come knowledge of immense importance in keeping the camellia enthusiast abreast of the times.

HYBRIDIZATION IN THE U.S.A. (Continued from Page 8)

reticulata CRIMSON ROBE, *C. japonica* (seedling) X *C. Irrawadiensis*, *C. cuspidata* X *C. fraterna*. He also says that he has obtained several seed pods by crossing various of the Camellia species with *Gordonia axillaris* pollen which he says is a tetraploid. However the pods had not germinated at the time of this report. This reminds this writer that a successful cross of *C. Pitardii* X *Tutcheria spectabilis* (which is supposed to bear yellow blossoms) has been reported from the West Coast. The plant has not bloomed yet but we understand that it will do so this coming season. In the Southeast we also have several plants, one year and two years old, of the cross *C. japonica* X *C. Granthamiana*, also of *C. reticulata* (wild form) X *C. Granthamiana*, the leaves showing definite resemblance to those of the *C. Granthamiana*.

"Many plants will be introduced as

hybrids in good faith which are not hybrids," writes Dr. Hilsman in the 1961 ACS Yearbook, "Chromosome count will frequently be able to prove or disprove hybridity when the alleged hybrid parents are of species with different chromosome counts. If the parents are allegedly of species with the same chromosome count then the scleroid method of cytology will be able to verify or deny results."

Considering that it is less than a decade ago that controlled inter-specific pollination of the genus *Camellia* started in the United States, considering also the time involved in bringing a seedling to the flowering stage and our frustrating ignorance of the mysterious behavior of the genus, we have made remarkable strides. We now can say without boasting that we have succeeded in emulating the pioneer English hybridists who showed us the way.

—NEWS AND VIEWS—

By Roy Thompson

This is sasanqua month. These delicate flowers begin early in October, are at their best in November, and are finished by the first of the year. They are worth their keep if only for the first thrill of pleasure they bring in the early fall; they are usually the first camellias to bloom. Their ability to withstand heat is notably attested by J. R. Fisher of New South Wales, writing in the June, 1962, *Camellia News*, a publication of the Australian Camellia Research society, Sydney. He reports that "Sydney has experienced one of the driest Autumns for many years and Victoria has been in the grip of a record drought." "While the blooms tend to droop at mid-day," he says, the plants are "hardy, sun-tolerant and able to withstand flood or drought with comparative equanimity." "When well established," he adds, "these plants are literally covered with bloom during the best part of two months."

* * *

The relatively thick leaves of camellias are evidently better able to retain water during hot spells than one might expect. Their white roots, too, are well adapted

to water storage. Maybe that is why a canned camellia can stand in thoroughly dried out soil for a surprising number of days before it begins to wither. And it takes a long time to die. Curled edges of the leaves give its owner a clear warning that water is needed.

* * *

Large amounts of what appears to be sulphur have fallen out of the air this autumn in Southern California, but no apparent damage has been done to growing things. However, the yellow stuff forms a thick, crusty coat on camellia leaves, and has to be washed off daily.

* * *

Fashions come and go—in camellias. A dozen years ago blush pink camellias were at the height of fashion. *Virgin's Blush* started the wave of interest, and the fad lasted until a dozen or so blush pink camellias were available, including the lovely *Dave Strother*. Today, while *Virgin's Blush* is still a lovely, medium sized flower in some of the older collections, it is all but forgotten by present day collectors, who don't know what a "hot" number it used to be.

MICRO CLIMATES AND CAMELLIA HEALTH (Continued from Page 7)

more rapid transpiration, not only because evaporation occurs quickly in warm air but also because warm air is capable of holding more water vapor. Transpiration exerts a cooling effect upon the internal tissues of the leaves; in the absence of the cooling effect of transpiration, leaf temperatures might become sufficiently high to cause damage to leaf cells.

Transpiration constitutes an ever-present risk, for an excess of transpiration over water absorption by roots leads to wilting and leaf burn. If water loss exceeds the intake by the roots, a water deficit develops in the plant, expansion of the growing cells ceases, and the plant stops growing. If the water deficit continues, the plant wilts. If it becomes too severe, leaves exposed directly to the light and heat will burn, and if exposure is prolonged other plant tissues wither and die.

From the foregoing statements on transpiration we can summarize that if the rate of water absorption by roots equals or exceeds that of transpiration, no wilting or burning occurs, but if transpiration over-balances water absorption, wilting is inevitable and sun burning is possible. This leads to the conclusion that there is a more positive wilt and sunburn control than the general practice of reliance on various degrees of shade. Excessive loss of plant moisture by transpiration can be controlled by increasing air humidity. Laboratory testing has shown that transpiration ceases in saturated air.

Practical examples can be cited to illustrate that control of transpiration by air humidity is more effective than complete reliance upon degrees of shading. Consider the report that cuttings rooted under intermittent mist spray show the highest take when the propagating bed is in the hottest and sunniest site available. Cooling agricultural crops by foliar sprinkling during the high midday temperatures is gaining in importance because of increased fruit set, better quality and greater productions per acre. Recent tests show that grapes, pole beans, alfalfa and sugar beet yields increased. It is now known that the increased air humidity

puts the plant to rest, so to speak, and stops evapo-transpiration. Experimentation is continuing on this phase of agricultural research.

Sacramento fuchsia fanciers are able to successfully grow these plants only by creating local areas of high humidity around their collections. Have you ever noticed that camellias in full sun in very large well-watered lawn areas seldom show leaf sun burn? Conversely, container-grown camellias on paved areas under 50 percent lath will frequently show severe burn.

In the 1959 American Camellia Year Book, this writer reported upon an experiment of growing 21 camellias in full sun with heavy ground cover beneath and an overhead sprinkler system which was turned on twice, for short intervals, in midday during hot weather. In June of that year, nine days were recorded with temperatures exceeding 104 degrees and with relative humidity as low as 9 percent. Only five leaves showed any burn and these were complicated by insect damage which inhibited the water movement in these leaves.

Horticulturists usually water plant foliage, walks, floors, and walls of greenhouses several times during hot summer days to maintain a high degree of humidity. This practice results in a general decrease in the rate of transpiration of plants growing in such houses. Glass jars are placed over camellia grafts to maintain a high humidity and assist the scion through a difficult period of callousing.

A detailed discussion of what has happened by increasing air humidity is desirable. When the atmosphere is very humid, the evaporation of water from leaves is reduced, for the difference in water vapor concentration in the inner spaces of the leaves and in the outside air is so slight that the outward diffusion of water molecules from leaves is very slow. The rate of transpiration is roughly in direct proportion to atmospheric humidity; thus, the drier the air, the more rapid is the rate of water evaporation from leaves. Then the greater the atmospheric humidity, the lower the rate of transpira-

tion and the greater is the amount of water retained within the plant for growth.

During periods of no wind, the motionless air near transpiring leaves becomes very humid and the rate of evaporation decreases. The camellia is capable, during periods of calm air, of creating a high humidity around the outside of its own leaves. This leads to the conclusion that the transpiration from leaves of other plants in close proximity to the camellia will greatly assist in creating additional humidity. Expanding upon this, it is possible to create a highly humid area around the camellia by choosing the proper type of foliage plants which would then be used in sufficient quantity for the needed area of transpiring leaf surfaces. This in turn will produce the desired local climatic environment and is called a *Micro Climate*.

The 1957 Yearbook of Agriculture defines *Micro Climate* as the local climatic condition near the ground resulting from modification of the general climatic condition by local differences in relief, exposure and cover.

Research has shown that the evaporation from the soil surface results in the loss of appreciable amounts of available water from soils, but that it is by no means the major cause of such water loss. The factor ordinarily responsible for the greatest amount of water loss from soils is evaporation from the leaves of plants. The magnitude of such transpiration is often very great. One mature tomato plant on a warm dry day will transpire a gallon of water. A mature apple tree may transpire 1800 gallons of water in a growing season of about six months. It has been determined that a single sunflower plant during a growing season of about 140 days loses about 145 pounds of water, an average daily loss of more than one pint of water. A single corn plant has been found to lose, by transpiration, over 50 gallons of water during its life span of 100 days. These tremendous amounts of water, lost in the form of vapor into the atmosphere, are derived from the soil from which the water is absorbed by the roots.

A study of these figures indicates how vast expanses of vegetation, such as forests, are able to exert marked influences on the climate of the regions in which they grow. The tremendous quantities of water vapor expelled by masses of vegetation affect air temperatures, increase the moisture content of the air and thus create a local climate. Vegetative influence is equally effective in bringing about more habitable conditions in areas as small as neighborhood parks and the residential back yard, including the camellia garden. These are *Micro Climates*.

Camellias planted in soil areas devoid of a living ground cover growth or not mulched with inorganic or organic materials such as peat, ground corn cobs, wood shavings, ground bark, compost, leaves, etc., will be subjected to conditions which reduce the air humidity, this being contrary to a suitable *Micro Climate*. The foregoing mulches are effective in reducing water loss from the soils, as they blanket humidity into the soils nearly as effectively as a concrete terrace.

The use of living ground covers beneath camellias and a tree canopy of foliage overhead is indicated as most conducive to the conditions for a desirable *Micro Climate*. Vapor transpired from foliage *fluctuates* according to the temperature, to create a necessary humidity to insulate the camellia.

CONCLUSION

Growers of camellias (particularly *C. japonica*), in hot dry climates might well consider that: Planting camellias in barren areas not contributing to humidity is contrary to a habitable situation. Select living ground covers beneath camellias, and a suitable vegetative shade canopy above provide natural environment. The relationship of shade and humidity are proportional. The camellia will grow in full sun without burn if subjected to sufficient atmospheric humidity. The suggested optimum would seem to be some overhead protection (perhaps 40 to 50 percent shade in hot dry climates), a living vegetative soil cover and an overhead sprinkler irrigation system to raise midday humidity during extremely hot weather.

IN WHICH YOUR EDITOR WANDERS (Continued from Page 14)

couraged to exhibit but who are deterred from doing so in a competitive show simply because they have neither the desire to win nor to lose. As a matter of fact, one might observe that there are more instances of the non-competitive show leaning toward competition than the reverse and, even where there is no acknowledged competitive class, the practice of having "review" or special display tables, where the most outstanding blooms are assembled, certainly is recognition in principle of choosing the best. It must be admitted there are virtues in both and the solution would seem to be a compromise, in which the exhibitor could individually decide on what basis he would prefer to display his blooms.

The situation can be alleviated by providing for both—requiring that competitive blooms be placed in classes but permitting non-competitive exhibits to be shown as "collections," thereby getting the pleasing effect of contrasting forms and colors displayed side by side. Upon further reflection, it seems to the writer that here in the United States we incline a little too much toward ribbons, prizes and trophies, with the result that some of the really more important aspects of a show, such as educational exhibits and instruction, are side-tracked. On the other hand, one gets the impression that most of the non-competitive shows could benefit from that extra effort which goes into striving to excel.

We could mention having seen in New Zealand (at Pukehiti) tree fuchsias 25 feet high with a trunk a foot in diameter; near lovely Wanganui a venerable old *Magnolia campbelli* some 70 years old, growing in a dell unattended and left to its own resources, but an absolutely perfect specimen with hundreds, perhaps thousands, of blooms open at one time; seeing the breath-takingly beautiful wild form of *clematis* growing in the forest, where it hangs as a beautiful white bower from the trees and, of course, the ubiquitous *gorse*, introduced from Scotland for hedges on the sheep ranches, with its golden mantle of broom-like blooms

standing out beautifully against the rolling green hills, but which has now become a pest due to its prolific self-seeding everywhere. It has a fair counterpart in Australia's *wattle*, very similar to our *acacia* but perhaps even more vigorous and prolific, although this flowering plant reaches the size of a large tree and becomes simply gorgeous in its natural habitat.

We found excellent botanical gardens in most of the major cities and, while almost uniformly too early for the spring flowering, saw many very interesting plants, including century-old gardenias bearing numerous large, pendant seed pods, about the size of and somewhat resembling black figs. The many botanical gardens and their excellent condition is fitting testimony to the widespread interest in horticulture in both Australia and New Zealand and, by the same token, these splendid public displays undoubtedly contribute significantly to the situation of activity in the private garden and to the surprisingly broad knowledge of botany generally which one finds in these countries. In fact, there is a rather unusual and universal interest in growing things over there and pride in the maintenance of a beautiful neighborhood is fostered by some civic administrations through the granting of annual awards for the most beautiful or best maintained blocks in the city. (Strangely enough, we even found this practiced in Tahiti, as well, but on an individual garden basis.)

What impressions does a trip like this leave with one? Without question, the strongest impression left with the writer is one of relatively virgin lands, with lots of "elbow room," populated by energetic and friendly people who perhaps do not realize fully the blessings of what might be called "under-population." From a camellia standpoint, they have everything it takes to excel and, given time, may be expected to do so. You will hear more from Australia and New Zealand in the years to come—the fantastic growth rate of their camellia societies is sufficient evidence of this.