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The Camellia Journal

AN OFFICIAL PUBLICATION OF THE AMERICAN CAMELLIA SOCIETY
VOL. 30, NO. 4 PRICE \$1.50 NOVEMBER, 1975

ca-mel-lia (kə mēl' yə, -mē'lǐ ə), *n.* a plant, *Camellia* (or *Thea*) *japonica*, native in Asia, with glossy evergreen leaves and white, pink, red, or variegated waxy roselike flowers, familiar in cultivation.

[named after G. J. *Kamel*, Moravian Jesuit missionary]



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Volume 30

Number 4

November, 1975

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President's Message

When Brownie told me that Dave Feathers was going to be guest editor of the November issue of the Journal, I felt sure we were assured of a real treat. The west coast has always been a leader in the development of many new and interesting Camellia varieties. There are few, if any, society members more capable of giving us a clear and understanding discussion of hybrids and hybridization.

At this time I am not sure who is going to assist him in developing this subject, but I am certainly looking forward to seeing and reading this issue from cover to cover. I know Brownie has ordered extra copies; I feel sure there will be a demand for them for some time.

The idea of devoting an issue to one angle of Camellia culture seems to be an excellent one and I am sure it will add to the enjoyment of a large majority of our members. Everyone has already had the opportunity of reading the August issue, which was devoted to Greenhouse Culture, and I believe they will agree it was



not only successful, but will be a great help in increasing interest in growing under protected conditions.

When you read this, the Fall shows will be well along and the fever should be rising high. As the winter shows start, I feel it is vital that considerable stress be put on the development of an attractive booth for obtaining both local and national membership.

Cultural displays and particularly information for newer and smaller growers should be stressed.

A fine show is extremely important, but never forget that fine shows do not perpetuate themselves. Interested personnel must be back of them and interested personnel comes only from live and active organization. Membership must be increased and nurtured in order to have a successful camellia experience.

OFFICIAL PUBLICATION OF THE

American Camellia Society

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ACS offices are located at Massee Lane 5 miles south of Fort Valley, Georgia, on State Hwy. 49 or 12 miles west of Interstate 75 from Perry, Georgia, then North on State 49 at Marshallville.

Issued February, May, August and November from the office of the Secretary of the American Camellia Society.

A subscription of \$7.50 brings you the four issues of *The Camellia Journal* and the bound *American Camellia Yearbook*, published in December.

Entered as second class matter September 1, 1960, at the Post Office at Fort Valley, Georgia, and additional office of entry, under Acts of August 24, 1912.

Annual Members—\$7.50; Joint Husband-Wife \$12.00; Life Membership \$150.00; Joint Husband-Wife Life Membership \$240.00; Patron Member \$200.00. Make payment to American Camellia Society, Box 212, Fort Valley, Georgia 31030.

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FOREWORD

The art of camellia cultivation has reached such an advanced stage that many of the flowers and plants available today bear little similarity to those of a half-century ago, except in the basic characteristics. This remarkable development is not peculiar to the camellia, nor even to ornamental plants as a whole, but to food-source plants as well. Much of this progress is due to the interest and efforts of the amateur grower. This is true of camellias perhaps more so than any other ornamental plant for the very understandable reason that the time required for production and confirmation of a new camellia is so great as to make such an undertaking uneconomic for the average professional.

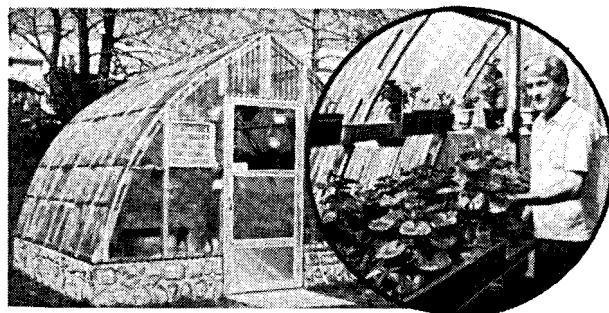
Because of these facts, it is appropriate that this Special Issue of *The Camellia Journal* be dedicated to those resolute and indefatigable hybridizers and growers, both amateur and professional, whose devotion and patience have brought about such great progress. Likewise, it is their co-operation that has made possible this historical record of camellia hybridization to date. To these good friends go our heartfelt thanks for their generous participation. All have been most willing and helpful, but I must particularly mention Mr. T. J. Savige, our Australian friend, whose valuable assistance and suggestions have been exceptional.

INTRODUCTION

The title of this issue is designed to emphasize the fact that camellias, which were formerly so alike that they were referred to in the old days simply as "japonicas", have now reached such an advanced stage of development as to leave very little room for the creation of something new and different within that, the principal species, although there is still ample opportunity for improvement.

There are other valid and sufficient reasons why the hybridization of camellias, or for that matter any plant, is desirable. Diverse types which are complementary can produce superior offspring in combination. The expression "hybrid vigor" arises from the fact that a combination of different but compatible species often results in stronger growth, larger foliage and flowers and improvement in general. On the other hand, inter-breeding tends to accentuate any inherent weakness, which is probably the reason marriage between close relatives is frowned upon. In the case of the camellia, whose fantastic development during the past quarter-century has about exhausted intra-specific potentialities, hybridization has become the principal hope for notable improvement and innovation. This prospect has been materially aided by the introduction of new species possessing attributes hitherto unavailable, thereby encouraging exploration into the unknown—always the most exciting and enticing stimulus. Thus, we must look largely to hybrids for our "camellias of the future".

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Botanically-speaking, a "hybrid" is the offspring from a combination of: (1) two different species, or (2) a hybrid and any species, or (3) two hybrids. A "back-cross" is a cross of the offspring with either of the parents and an "inter-cross" results from crossing two of the offspring from the original cross with each other.

The literature on the hybridization of camellias has been rather sparse to date. While a score of articles on this subject have appeared in the A. C. S. *Yearbooks* since 1957, and additional articles in the *Journal* from time to time, as well as good coverage of the subject in such reference books as Tourje's *Camellia Culture* and the R. H. S. *Rhododendron and Camellia Yearbook* (1961), the fact remains that, to the best of the writer's knowledge, so far only one previous publication has been devoted entirely to camellia hybridization. That was the special issue of the Northern California Camellia Society's *Camellia Bulletin* for October, 1958 (Vol. 12, No. 1) entitled "The Hybrid Camellia". Since that time, greater progress has been made in camellia hybridization than in all of the century-and-a-half preceding. Thus it is appropriate and timely that an attempt be now made to bring this important matter up-to-date and, in doing so, to classify and index the authentic hybrids for reference purposes. That is our object and effort herein.

DAVID L. FEATHERS, *Guest Editor*

Breeding New Forms of Camellia

WILLIAM L. ACKERMAN *

We are sometimes asked: "why try to develop new forms of camellia when there are so many registered cultivars now in existence?" One needs only to leaf through *Camellia Nomenclature*¹ with its 157 pages of descriptions of *C. japonica* alone, to know there is no shortage. Yet, this is like saying our civilization has progressed far enough and we should have a moratorium on all further inventions and experimentation—no new cars, trains, planes, TVs, etc. As much as some of us might like to call a halt, modern man can never stand still—so we may expect new camellias as long as plant breeders are around.

The main objectives of the research work on camellias at the U. S. National Arboretum at Washington, D. C. is to produce plants for greater cold hardiness, floral fragrance, new flower colors and types, and new leaf and plant forms. The work deals primarily with interspecific and intergeneric hybridization, species compatibility relationships, seed and anther culture, cytological investigations and initiation of polyploidism.

Although most of us think in terms of *C. japonica*, *sasanqua*, *reticulata*, and perhaps also *hiemalis*, *vernalis*, and *saluenensis*, there are many other species which are relatively unknown. Sealy, in his *Revision of the Genus Camellia*,² describes 82 recognized species. Of these, there are perhaps 32 which have been successfully introduced into the United States. At the Glenn Dale Station there are 29 species.

There are good reasons why we do not hear more about the minor species; most have small flowers of little commercial interest, they are difficult to hybridize with commercial varieties, and it takes many years of backcrossing to get hybrids that are worthwhile. Yet, it is within this virtually untapped reservoir of genetic variation that we may expect truly new forms of camellias to emerge.

One does need patience to become involved with interspecific hybridization, and it is not just for everyone. Over the years, at Glenn Dale, 12,645 controlled crosses involving 256 interspecific combinations have been made. From these, 1,453 hybrids were developed, or about 11% successful takes. Intergeneric crosses are even less productive; here, 1,056 controlled crosses involving 24 intergeneric combinations resulted in 11 hybrids, or a little over 1% take. Of particular interest among the intergeneric hybrids was one, *Tutcheria virgata* x *C. miyagii*, with 105 chromosomes. To the best

of the author's knowledge, this is the only valid heptaploid involving the genus *Camellia*.

In an attempt to make it easier for other camellia breeders interested in interspecific hybridization, a study of species compatibility was made,³ within and between, the subgeneric sections designated by Sealy's taxonomic study. On the basis of compatibility relationships, these sections divide into two main groups; the first group contains camellia, heterogenea, theopsis, and camelliopsis; the second contains paracamellia and thea. Sealy listed *C. miyagii* and *C. hiemalis* in a group called Dubiae, for unknowns, but actually both should be classified with paracamellia.

Producing hybrid seed is one thing, but getting them to germinate and develop into plants is another. Embryo culture (or more exactly naked-seed culture) is an excellent method for growing plants from seeds resulting from difficult crosses, where normal conditions and germination methods would fail. Techniques in aseptic seed culture work have been described for those interested.⁴

A good breeding parent must produce viable pollen. A quick test if you have a microscope (even a cheap, low-powered one will do), is to dust some pollen on a glass slide, stain it with aceto-carmin and examine it at 100X. The viable pollen will stain a deep purple and be round and smooth surfaced, while aborted pollen will stain poorly, if at all, and have a shriveled surface. Some camellias produce greater numbers of unreduced pollen grains than others, and examining pollen under the microscope for over-sized pollen is one way to determine which parents are most likely to have triploid progeny.

Species possessing dominant characteristics can be extremely useful when they are used for pollen parents. Similarities between progeny and the pollen parent help confirm hybridity. Several species that contribute dominant floral characteristics are *C. granthamiana* with large elongated, frilled white petals; *C. hongkongensis* with trumpet-shaped brilliant red flowers; *C. miyagii* with long narrow petals; and *C. saluenensis* with clear rose pink illuminative color of the petals.

The flowers of F₁ interspecific hybrids are frequently disappointing from a commercial viewpoint because of their general lack of size and quality. Sometimes, one gets an outstanding flower in the first generation, but more often, the F₁ hybrid, if it is not completely sterile, needs to be crossed with a good quality commercial variety. From these second, or possibly third, genera-

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tion crosses, hopefully will come the new forms which make interspecific hybridizing worthwhile.

Polyploidism can remove sterility barriers in hybrids. Many hybrids are like mules—they are highly sterile. You can use the drug colchicine to double the chromosome number and regain fertility. This was done with 'FRAGRANT PINK' by taking 60 plants of this variety about 18" high, cutting back to 6", and gouging out all buds except three. When the buds had begun to expand, they were treated with colchicine and detergent plus 10% glycerine every other day for three treatments. This increased the chromosomes from 30 to 60 on 2 out of 60 plants. The flowers of the two colchiploid plants were larger, but more importantly, the normal-appearing pollen was increased from 5 to 77 percent.⁵

Much work has been done, both in the eastern United States and on the Pacific Coast, toward the development of floral fragrance. The importation of *C. lutchuensis* from Okinawa has done much to spur on this work during the past 15 years. Unfortunately, most of the early crosses involved *C. lutchuensis* with nonfragrant varieties of *C. japonica* and *C. rusticana*, even though varying degrees of floral fragrance do exist among the many *C. japonica* varieties. Belatedly, the author has gone back to reconstitute the original F_1 interspecific crosses with *C. lutchuensis*, but this time using fragrant-flowered varieties of *C. japonica*. Also, these latter varieties have been crossed with the best of the *C. lutchuensis* F_1 hybrids. If, as is suspected, the genes for flower fragrance are different in the two species, we should wind up with new hybrids more fragrant than either parent.

Greater cold hardiness is also an important objective of breeding at Glenn Dale. Here, 964 clones collected in northern Japan were tested outside for five years, along with commercial standards, at temperatures reaching -10°F . At the end of this time, only 38 clones had survived. One of these was named 'FROST QUEEN'. 'FROST QUEEN' was crossed with 'FRAGRANT PINK'. The flowers of the hybrid are similar in form and size to 'FROST QUEEN', but a lovely pink, and fragrant. This hybrid is now under test for cold hardiness.

To increase the production of flowers, *C. fraterna* was used in a series of crosses. Several of the hybrids had larger flowers than the above species and also the floriferous habit of this species, which should make them of value as landscape plants. *C. granthamiana* has an interesting crinkled texture of the flower petals, as well as a distinctive leaf-vein pattern. Both these traits come through strongly in the hybrids, and we now have *C. granthamiana-like* flowers in several colors. *C. miyagii* has long, narrow floral petals. This character is being utilized with some success in efforts to develop spider-form camellias, much as are present in some chrysanthemum varieties.

Other experiments are being conducted to extend

the blooming season. One aspect of this effort is the utilization of a repetitive-flowering clone introduced from Japan. This clone blooms 10 months of the year, under greenhouse conditions at Glenn Dale. The new flowers develop directly over the top of the old ones through the extension of the floral axis.⁶ New colors in flowers are being sought. Most of us are familiar with the search for yellow. Besides this, however, a reasonable degree of success has been accomplished in developing good clear lavenders and even the color orange. Efforts are also being extended to the development of camellias with attractive leaf variegations, camellias with pendulous branches suitable for hanging baskets, and slow growing dwarfs for house plants and in small gardens.

Chromosomes are the nuts and bolts of our breeding work. They are the basis of genetic inheritance.⁷ Studying chromosomes can provide the key to unlocking the secrets of otherwise unexplainable phenomena. The discovery of a giant, translocation chromosome in 'KURO TUSBARI' (one of the "Black" camellias of Japan) and its association with the intensive black-red pigmentation of this variety, is a notable example.⁸ Another very intriguing cytological study is that involving aneuploidy in camellias. Most camellias are euploid, meaning they have a chromosome number which is a multiple of the basic genome number of 15, i.e., diploids = 30, triploids = 45, tetraploids = 60, hexaploids = 90, etc. In chromosome studies, especially among interspecific and intergeneric hybrids, we find plants which have lost or gained odd numbers of chromosomes. So far, the author has found 31 hybrids with aneuploid, or odd numbers, of chromosomes. Some examples include diploid x diploid hybrid crosses with $(2X - 2) = 28$, $(2X + 1) = 31$, and $(2X + 2) = 32$; diploid x tetraploid crosses with 43, 44, and 46 chromosomes; diploid x hexaploid crosses with 54, 55, 56, 57, 59, 62, 72, and 77 chromosomes, and other odd number forms in higher polyploid series.⁹ Although aneuploids probably will not have any direct use in the breeding and development of camellias, little is known about the effect of aneuploids on the expression of genetic characters. That they do have an effect, especially at the near diploid and triploid levels, has become apparent. It will take further studies along these lines before we know how significant these aberrations really are.

The question has been asked whether it makes any difference which parent is the female in a cross between a polyploid and a diploid. I believe it does, particularly if the polyploid produces more than one kind of gamete, as is the case with triploids, pentaploids, and other polyploids with an odd number of genomes. For one thing, these polyploids are more apt to produce gametes with aneuploid chromosome numbers. Aneuploids are more common in camellias than I believe most of us realize. Also, I believe there is some evi-

dence that egg cells with aneuploid chromosome numbers are more likely to survive than where they occur in pollen grains. If this is true, as I think it is, then the breeder could expect a greater fertility and also greater seedling variability when the polyploid is used as the seed parent than when it's used as the pollen parent. The relative number of aneuploids increases appreciably when one gets involved with polyploid parents.

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—ACS—

Selection of Seed Parent

T. J. SAVIGE
Lavington, Australia

In general, when making a cross between two varieties of plants, the seed parent is selected because of its seed setting propensity. Certain varieties of camellia have become known as good breeder plants because of this and also because of the proportion of good seedlings they throw.

However, with interspecific hybridising the question is asked, "does it make any difference to the outcome which of two species is used as a seed parent, and if so, why?"

Firstly, it can be said that, as far as is at present known, it makes no difference insofar as the characteristics of the eventual progeny are concerned, which way a particular cross is made when the parents are of a common ploidity. Every cell of a particular clone contains the same genetic material, and there is no reason to believe that the gene complement supplied via the pollen would be different from that originating from the ovum.

However, in hybrids involving diploids with polyploids, due to varying survival characteristics between

egg and pollen cells, there is reason to believe as a general rule that, when the polyploid is used as the seed parent, the chances of successful seed set and possibility of obtaining greater seedling variability are increased.¹

Also, we do find in practice that some interspecific crosses are more successful if made with a particular species as seed parent. This can be due to the actual physical nature of the sex mechanism involved. For example, if pollen from species which have small-sized pollen grains is placed on species with long styles it could be that the pollen cannot develop sufficient energy to drive the pollen tube all the way to the ovary. This problem can sometimes be overcome by surgically removing a section of the style and placing the pollen on the cut end.

Some species produce copious pollen, while with others the pollen supply is sparse, but they may have a well-developed gynoeceum. These factors will influence the selection of the seed parent. For these and various other reasons, some unknown, the compatibility of certain species necessary to obtain successful crosses can vary, depending on which is used as a seed parent and, as the whole point of the exercise is to obtain viable seeds, the main effort should be put into making the cross in the most successful direction.

Insufficient conclusive work has been done on species cross compatibility to produce a meaningful guide for the hybridiser, but those who have worked with certain species have produced some tentative criteria.

As an example, *C. reticulata* is a more successful seed parent when crossed with *C. japonica*, while with *C. sasanqua* it is best used as a pollen parent. *C. granthamiana* is a poor seed parent, mostly due to the poor survival rate of its seedlings and the low viability of the seed. This can be overcome by embryo culture and seedling inarching. However, it has been successfully used as the pollen donor on *C. reticulata* and *C. japonica*.

In some species special clones exist that are triploid. These are very seed-sterile and obviously should be avoided as seed parents. Nevertheless, they will produce some result as pollen parents. In particular, these include some of the most spectacular varieties of *C. japonica* such as 'NAGASAKI', 'MATHOTIANA', 'SODEGAKUSHI' (Lotus) and 'LADY CLARE'.

The late Dr. R. K. Cutter, in his breeding for fragrance, commented that *C. japonica* was more successful as the seed parent when crossed with *C. lutchuensis*, while *C. reticulata* was a complete failure when used with *C. lutchuensis* pollen, but quite successful with *C. fraterna* pollen. Also *C. fraterna* pollen on *C. japonica* was more successful than the reverse.

The record of success as to the following crosses is as shown below. The seed parent is always placed first. *C. hiemalis* has been included with *C. sasanqua*.

¹ For a further discussion of this point, the reader is referred to the comment by Dr. W. L. Ackerman in his article herein. (Ed.)

* <i>C. cuspidata</i>	X	<i>C. fraterna</i>
	X	<i>C. granthamiana</i>
	X	<i>C. honkongensis</i>
	X	<i>C. japonica</i>
	X	<i>C. lutchuensis</i>
*	X	<i>C. saluenensis</i>
	X	<i>C. sasanqua</i>
<i>C. fraterna</i>	X	<i>C. lutchuensis</i>
	X	<i>C. salicifolia</i>
	X	<i>C. sasanqua</i>
	X	<i>C. 'BUDDHA' (reticulata x pitardii var. yunnanica)</i>
<i>C. granthamiana</i>	X	Nil
<i>C. hongkongensis</i>	X	Nil
<i>C. irrawadiensis</i>	X	Nil
* <i>C. japonica</i>	X	<i>C. cuspidata</i>
*	X	<i>C. fraterna</i>
*	X	<i>C. granthamiana</i>
	X	<i>C. honkongensis</i>
*	X	<i>C. irrawadiensis</i>
*	X	<i>C. lutchuensis</i>
	X	<i>C. maliflora</i>
	X	<i>C. pitardii var. pitardii</i>
	X	<i>C. pitardii var. yunnanica</i>
	X	<i>C. rosaeflora</i>
*	X	<i>C. reticulata</i>
*	X	<i>C. saluenensis</i>
	X	<i>C. sasanqua</i>
	X	<i>C. Sinensis Assamica</i>
	X	<i>C. taliensis</i>
	X	<i>C. tsaii</i>
<i>C. lutchuensis</i>	X	<i>C. japonica</i>
	X	<i>C. reticulata</i>
<i>C. miyagii</i>	X	Nil
<i>C. maliflora</i>	X	Nil
* <i>C. Oleifera</i>	X	<i>C. sasanqua</i>
	X	<i>C. sinensis</i>
<i>C. pitardii var. pitardii</i>	X	<i>C. lutchuensis</i>
	X	<i>C. fraterna</i>
	X	<i>C. granthamiana</i>
*	X	<i>C. japonica</i>
	X	<i>C. reticulata</i>
	X	<i>C. pitardii var. yunnanica</i>
	X	<i>C. saluenensis</i>
	X	<i>C. sasanqua</i>
	X	<i>C. salicifolia</i>

<i>C. pitardii var. yunnanica</i>	X	<i>C. japonica</i>
*	X	<i>C. reticulata</i>
<i>C. reticulata</i>	X	<i>C. fraterna</i>
*	X	<i>C. granthamiana</i>
	X	<i>C. irrawadiensis</i>
*	X	<i>C. japonica</i>
	X	<i>C. pitardii var. pitardii</i>
*	X	<i>C. pitardii var. yunnanica</i>
	X	<i>C. rosaeflora</i>
*	X	<i>C. saluenensis</i>
* <i>C. rosaeflora</i>	X	<i>C. saluenensis</i>
	X	<i>C. fraterna</i>
* <i>C. saluenensis</i>	X	<i>C. cuspidata</i>
	X	<i>C. fraterna</i>
	X	<i>C. granthamiana</i>
	X	<i>C. hongkongensis</i>
*	X	<i>C. japonica</i>
	X	<i>C. lutchuensis</i>
	X	<i>C. maliflora</i>
	X	<i>C. pitardii var. pitardii</i>
*	X	<i>C. reticulata</i>
	X	<i>C. rosaeflora</i>
	X	<i>C. salicifolia</i>
	X	<i>C. sasanqua</i>
<i>C. saluenensis</i>	X	<i>C. saliensis</i>
	X	<i>C. sinensis</i>
<i>C. salicifolia</i>	X	Nil
<i>C. sasanqua</i>	X	<i>C. granthamiana</i>
	X	<i>C. japonica</i>
	X	<i>C. miyagii</i>
	X	<i>C. oliefera</i>
*	X	<i>C. reticulata</i>
	X	<i>C. saluenensis</i>
	X	<i>C. sinensis</i>
	X	<i>C. tenuiflora</i>
*	X	<i>C. vernalis</i>
<i>C. tenuiflora</i>	X	Nil
<i>C. tsaii</i>	X	Nil

Where marked with an asterisk (*) the cross has produced hybrids of sufficient merit to receive a varietal name as listed in *Camellia Nomenclature* 1974.

In conclusion, the best advice that can be offered is to try any interesting combination both ways until you have determined what is most successful under your particular set of conditions.

Hybridization Notes and Experiences

L. E. JURY

New Plymouth, New Zealand

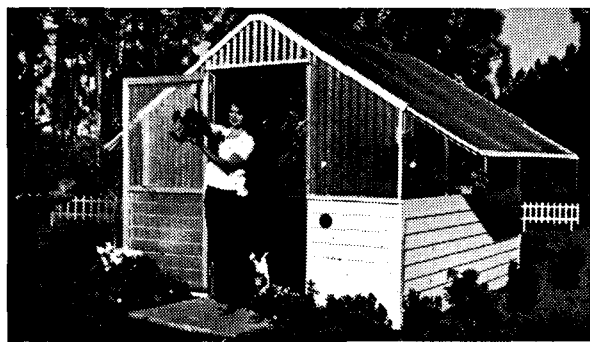
I have been honored with the request to write an article, principally on *C. saluenensis* x *C. japonica* hybrids, possibly because I have raised several hundred of them, twenty of which have been named. The reason so many were raised from the first generation cross was to have a fairly wide selection from which to choose those with extra substance and then go on to the second, or back-cross. I said from the beginning of my work on camellia hybridization that the second generation would result in the best hybrids. That has been the case but none have yet been registered because of various eventualities. Owing to unforeseen circumstances, my second-cross plants have been moved every year. One year they were moved twice, once in mid-summer when they had to be planted on a farm. Here they suffered from dryness as well as being attacked by grass grubs, both in roots and foliage, and some were lost. From the farm I rescued a number which showed promise; however, they were very slow in recovering. In the meantime, I sold my property and took up a smaller garden. Again, plants had to be moved—into a nursery corner. Those which showed good potentialities were then removed into a more permanent location. These plants are now about to bloom for the fourth, fifth or sixth season. But, whereas they had been flowering previously under adverse conditions, this year they have a better chance and I shall be able to

evaluate them properly and make selection of those suitable for naming.

From time to time I receive letters asking for advice as to the best forms of *C. japonica* to cross with *C. saluenensis*. From my own experience and what I have seen of other hybridists' work, I feel that no useful purpose can be served by pursuing that cross any further. The F_1 (first generation) hybrids have given us an excellent range of material from which to make selections that will enable hybridists to go on to a more advanced stage of development by back-crossing.

Not only does hybridizing require much time and patience, one has to work for several years with camellias before being able to evaluate results. Therefore, it is better to follow a plan which holds the greatest promise of improvement. "Back-crossing" means to cross the F_1 offspring back onto either one of its parents; for example, pollinating *C. saluenensis* with 'DONATION' or any other good semi-double or double form of *Williamsii* F_1 hybrid. In such back-cross the ratio of parentage would be 75% *C. saluenensis* and 25% *C. japonica*. However, I have found that this particular cross results in thinner petal structure and I do not recommend it. The better way is to select the F_1 *Williamsii* hybrid which has good substance, a single or semi-double which will set seed, cross with good semi-double forms of *C. japonica*—or the reverse; select a semi-double *japonica* which will set seed and pollinate with good semi-double or double forms of F_1 *Williamsii* hybrids. The resulting plants from either of the back-crosses just mentioned would have the ratio of 75% *japonica* and 25% *saluenensis*. This is the procedure most likely to result in better substance as well as larger blooms and a wider range of colors, altogether making the project worthwhile. Back-crossing, line-crossing, causing mutation, single plant selection and re-selection are all practical and proven methods of improvement known to plant breeders. Indeed, the results of these methods are major improvement in food crop yields, some of which have been doubled, trebled and even quadrupled.

From my own experience, the cross of *Lilium speciosum* x *L. auratum* back-crossed again to *L. auratum*, made such a wonderful improvement and range of colors as to make one marvel how this was possible. The improvement resulting from back-crossing *C* x *williamsii* hybrids is certainly not so pronounced, largely, I think, because *C. japonica* is not so fixed in characteristics—indeed it could hardly be more diverse. Probably this is because our cultivated forms of *C. japonica*



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are really hybrids between *C. rusticana*, the "Snow Camellia", and *C. japonica*. In the 1957 *American Camellia Society Yearbook*, Page 6, Dr. Tuyama says these two species grow together in certain localities and hybridize naturally. He also says many varied double forms of *C. rusticana* have been found but the double form of *C. japonica* (which he refers to as the "bush camellia") has never been found in the wild. So we should not be surprised that our cultivated forms of *C. japonica* are so diverse in characteristics. Nevertheless, I would strongly recommend back-crossing the camellia, with its diverse possibilities in form and color and, because of this diversity, there is all the more reason for raising as many as possible of each cross. Whatever the number raised, there always seems to be one which stands out as "the pick of the bunch". If many are raised it increases the likelihood of attaining the highest result possible from that cross.

When I met Mr. Kenneth Hallstone here he remarked that he had been hoping to meet the originator of 'ELSIE JURY'. I told him that variety could be improved by crossing it with 'BERENICE BODDY'. If a sufficient number were raised, there would be a possibility of getting one with more delicate toning and texture, tipped deeper pink and with a longer flowering season and hardier. Well, that would amount to improvement and the ratio of parentage would then be 75% *C. japonica* and 25% *C. saluenensis*. Because of its hardiness and long-season flowering I rate 'BERENICE BODDY' as a superior breeder plant and would go so far as to state that a hybridist using this variety and crossing with the best double forms of Williamsii hybrids, could be assured of better results by this method of back-crossing. Again, if the hybridist crossed 'BERENICE BODDY' with *C. japonica* x *C. reticulata* hybrids such as 'VALENTINE DAY', 'HOWARD ASPER', etc. that would in effect be on the order of a back-cross to japonica as the parentage ratio would then be 75% japonica and 25% reticulata, with excellent prospects of large, prize-winning blooms.

My plant of 'BERENICE BODDY' was the first imported into New Zealand and has never set any seed, but a

friend had a plant which did.* With her permission I crossed it with 'ELSIE JURY' and now have a few seeds germinating. This season I am going to try other F₁ hybrid crosses including 'DOROTHY JAMES', which one should result in some lovely two-toned blooms. The advantage in using double-flowered forms for both parents should result in a higher percentage of doubles. That is one of the reasons I favor the use of *C. japonica* 'WAIWHETU BEAUTY' as a seed parent. Fortunately, it is the one semi-double which sets seed freely here. It is also a dwarfer and bushier grower than most japonicas, which is the main reason I have a high regard for it as a breeder plant. Nine years ago, I worked some back-crosses on 'WAIWHETU BEAUTY' as the seed parent, crossing with F₁ hybrids. Among the seedlings obtained were three resulting from pollinizing by 'ELEGANT BEAUTY' (*C. saluenensis* x *C. japonica* 'ELEGANS') two of which flowered double form, somewhat similar to 'ELEGANS'. One shows promise of being an improvement on 'ELEGANS'—softer color, larger flower and bushier plant. As 'ELEGANS' is rated as one of the best old reliables, I felt elated at the prospect of such improvement, so 'ELATION' is the proposed name. The other double is a rosy pink with a cream-yellow central bunch of petals. When I saw the first bloom in late afternoon sunshine it seemed to resemble the rising of the sun on a sea of pink. I marveled at the creation of the Almighty—it should be named 'DEVOTION'. Both of these plants are now only about 27 inches in height after having had a hard time. They are soon to come into bloom for the fourth season but for the first time under better conditions. I realize they have a long way to go for further trial and evaluation in other localities. However, I am sure of this—this result could not have been attained on the F₁ level. Two excellent hybrids from three seedlings is an exceptionally high score, but the success with that cross does not occur in all camellia back-crosses. Perhaps 'ELEGANS' possesses greater po-

* A seedling of 'BERENICE BODDY', designated 'BB #4' has proven to be the most receptive seed parent we have, accepting such diverse pollen as numerous japonicas, 'PINK SMOKE', 'FLUTED ORCHID', 'HOWARD ASPER' and *C. caudata*.—D. L. F.

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tentialities because of its excellent basic characteristics, which make it a superior breeder plant. On the other hand, I have found 'AREJISHI' crosses result in very irregular, unattractive blooms. So here is a point I would stress to hybridists: the importance of selecting the most promising forms of both parents for back-crossing, giving preference to long-season flowering habit and avoiding those which cling to dead flowers.

Among other back-crosses I have coming up for final evaluation this season is a 'TOMORROW' cross, which has large, rose-pink blooms bordered white. Another and more spectacular is a brilliant scarlet-crimson with wavy petals and petaloids mingled with lots of golden anthers—proposed name 'RENDEZVOUS'. Neither result would be possible from F₁ hybrids.

Here in my smaller garden I have only a few breeder plants: 'TINSIE', 'WAIWHETU BEAUTY', 'DREAM GIRL', two 'FUYAJO' crosses for intense reds and a Wild Reticulata x 'WAIWHETU BEAUTY' hybrid. This latter plant was raised for the purpose of getting bushier-growing Reticulata hybrids and, of course, this hybrid could be back-crossed to either parent. 'TINSIE' has been crossed with 'ELEGANT BEAUTY', 'GUILIO NUCCIO', 'ELEGANS SUPREME' and others. The object in these crosses is not for large show-type blooms but rather for free-flowering, garden-display plants. Some readers may remember I raised a purple-blue by crossing 'FUYAJO' with 'LOTUS', but the plant was lost on being moved. I am again trying to get it from over 50 seedlings from 'FUYAJO' x japonica varieties which have some "blue" in them.

I have been asked if it makes any difference whether the smaller-flowered or larger-flowered species is used as seed parent in hybridizing. Some years ago, a friend told me he had a book written by an American

author on hybridization in which it was stated definitely that it is better to use the smaller-flowered plant as a seed parent. So I made a wrong-way cross on purpose, using *C. saluenensis* pollen on a single-flowered *C. japonica*. From the resulting dozen plants one was evaluated as equal in merit to 'J. C. WILLIAMS', the others being below that standard. In other crosses where I used *C. saluenensis* as the seed parent, crossed by double *C. japonicas*, some singles were much larger than 'J. C. WILLIAMS' and with more substance. So in this type of hybrid it would appear that the smaller-flowered species should be used as the seed parent; yet I would not like to be dogmatic about it.

The following is an up-to-date list of my named recent hybrids as per New Zealand Camellia Society's *Camellia Bulletin*, Vol. IX, No. 1, March, 1975:

Saluenensis x *Japonica*

'BALLET QUEEN'	(pollen parent)	'LEVIATHAN'
'CHARITY'	(pollen parent)	'WAIWHETU BEAUTY'
'DAINTINESS'	(pollen parent)	'MAGNOLIAEFLORE'
'HUNTSMAN'	(pollen parent)	'AREJISHI'
'JULIET SPENCER'	(pollen parent)	'DAIKAGURA'
'LADY CUTLER'	(pollen parent)	'VILLE DE NANTES'
'MIRAGE'	(pollen parent)	'MOSHIO'
'MY DIANE'	(pollen parent)	'DAIKAGURA'
'NARIDA'	(pollen parent)	'WAIWHETU BEAUTY'
'SATIN GOWN'	(pollen parent)	'WAIWHETU BEAUTY'
'SENIORITA'	(pollen parent)	'HERME'
'WILBUR FOSS'	(pollen parent)	'BEAU HARP'

and two single 'breeder' plants:

'BRIGHT BUOY'—

C. japonica 'FUYAJO' x *C. japonica* 'HASSAKU'

'GRANNIE'—

C. saluenensis x *C. granthamiana*

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Neutron Radiation of Camellia Hybrids*

WALTER E. LAMMERTS
Freedom, California

In 1965 I published a paper on neutron radiation of roses, indicating that when a variety is semi-double having only 14-18 large petals, but carrying factors for more large petals, neutron radiation can increase petal number to 29-36.¹ In this paper the need for selecting the right varieties was stressed. When the genetic potential is present, neutron radiation is effective in increasing the number of large petals arranged in a well formed bud, which opens to an attractive flower.

It was also found that a tyrian purple-colored variety carrying three dominant magenta factors and one factor for the recessive but commercially desirable currant red, could be changed to almost pure currant red. In the experiment reported, only one of the 50 radiated buds of this tyrian purple (MMMm) had the desired color. Unfortunately, when tested on a fairly large scale as a greenhouse variety, it was found that too much magenta still showed up on the second day that the flower was fully open for this selection to be worthwhile commercially. Evidently, one of the dominant M factors was not inactivated. Large scale radiation of varieties having the M factor in duplex or simplex condition (MMmm or Mmmm) would no doubt result in complete inactivation of this undesirable factor.

APPLICATION OF ABOVE RESULTS TO CAMELLIA RADIATION

In the above neutron radiation experiments, 50 buds of each variety were placed in a petri dish and exposed to 14 Mev neutrons from a Cockroft-Walton accelerator. Dr. Howard Tewes of the Lawrence Radiation Laboratory, Livermore, California, radiated the rose-buds and calculated the dosage rates. Six varieties were radiated. The petri dishes were placed 2-4 inches from the target in a basket type of holder. The total dosage in rads varied from 1810 on one side to 2710 on the opposite side of dish No. 1, down to 1020-1460 on dish No. 7, the top dish of the "piggy back" pair. Oddly enough,

* In Relation to Breeding for Size, Fragrance, and Color.

the buds in this top dish farthest from the target grew into perfectly normal plants. Evidently only a single layer of petri dishes can be placed around a target in order to have the buds effectively treated.

Considering now camellias, obviously buds cannot be used since camellias evidently are seldom budded. However, essentially the same result can be obtained by placing scions having only one eye or growth bud in petri dishes. The type used for whip grafts should be ideal. Only a short tapering stem should be used since there is evidence that the effectiveness of neutron radiation rapidly lessens as the amount of plant tissue is increased. Though 50 camellia scions of this type could hardly be fitted into a single petri dish, no doubt 25-30 could be arranged in one of them on moist filter paper. After radiation, which in roses took about six hours, they should immediately be grafted into vigorous understock. If the radiation has been effective, the scions will be considerably retarded and slow in starting. When growth begins, it will at first be deformed in foliage shape and leaf appearance. Axillary buds will be more normal in appearance and within a year the plants should be superficially normal looking. They should, if comparable in behavior to roses, show a tremendous range in height, shape of plant, vigor, and degree of green coloration of the leaves. When they begin to flower, the range in petal number and color of flower should be fully as great as that resulting from cross pollination.

VARIETIES LIKELY TO RESPOND TO RADIATION

Judging from our experience with roses, only varieties resulting from crosses in which at least one parent is very large and quite double, with large individual petals, should be chosen for radiation. With the idea of locating such varieties, I carefully checked out the camellia varieties registered in the various *American Camellia Society Yearbooks* since 1968 and found the following ones as suggestions:

Name	Size	Petal Number	Color	Parentage
1. 'CAPRICIOUS'	6-6½"	14-20	Rose Bengal	'CRIMSON ROBE' × 'VILLE DE NANTES'
2. 'MARY GOLOMBIEWSKI'	6"	8-9	Rose Red	'CRIMSON ROBE' × 'BUDDHA'
3. 'POP GEE'	6¼-7"	12-16	Rose Bengal	'CRIMSON ROBE' × <i>C. granthamiana</i>
4. 'VIRGINIA W. CUTTER'	5"	8	Pink	'MRS. BERTHA HARMS' × 'ACKERMAN'S' 63-62
5. 'LASCA BEAUTY'	6-7"	15	Soft Pink	'CORNELIAN' × 'MRS. D. W. DAVIS'
6. 'LILA NAFF'	4-5"	15	Silvery Pink	<i>C. reticulata</i> 'BUTTERFLY WINGS' seedling

Others will no doubt occur to readers more familiar with camellia varieties than I. The point is, that since petri dishes may be located in the basket around the target of the Cockroft-Walton accelerator, six varieties might well be used in the first radiation experiment.

RADIATION IN RELATION TO FRAGRANCE AND COLOR

So far, the most exasperating feature of successful crosses of *C. reticulata*, or derivatives of it such as 'BUDDHA', with the two fragrant camellias *C. fraterna* and *C. lutchuensis*, has been the lack of fragrance comparable in intensity to either of the parental species. Thus the late Dr. Cutter very kindly gave me three of his "Budfrat" fragrant hybrids. One of these sets seed quite readily with rather unrelated hybrids. However, its fragrance, though noticeable, can hardly be described as a strong one. Similarly, only one of the two *C. reticulata* × *C. lutchuensis* hybrids given me by Frank Pursel has any fragrance, and even it can only be detected on a warm sunny day near noon when the flower is fully open and so best able to express its latent fragrance potential. This behavior is rather puzzling in that Ackerman² has reported that the fragrance of *C. lutchuensis* is the result of the action of several dominant genes as shown by the F₁ and F₂ backcrosses with *C. japonica* nonfragrant seed parents. Since all of his hybrids had some fragrance, one or more of the dominant genes must be in the homozygous condition. The various degrees of fragrance which he reports for the F₁ hybrids must, as he concludes, be due to the presence of other dominant genes in the heterozygous condition. Pursel's hybrids have been checked out for chromosome number and have the expected 60 chromosomes. There must then be some inhibiting factor in the *C. reticulata* variety used by Pursel which prevents the full expression of the genes for fragrance from *C. lutchuensis*. Since Pursel's hybrids are large, in fact almost as large as 'CRIMSON ROBE', and the petals are also large, this hybrid would also be a

good candidate for neutron radiation. There is a strong possibility that the inhibiting factor or factors for full fragrance expression might be inactivated. Also the size of the flower and petal number might be increased.

The most exciting possibility, however, is the importation of a yellow-flowered variety, or rather species. When going through the various *Yearbooks*³ I came across the article by Dr. Hu Hsen-Hsu on new species of Camellias and *Theopsis*. In this article he describes a large, fragrant, golden-yellow-flowered species given the name of *Theopsis Chrysantha* Hu, sp. nov. At first this did not interest me very much, for intergeneric hybrids are usually so sterile as to make further progress impossible; but on carefully reading the editorial note, I found that *C. lutchuensis*, *C. fraterna* and *C. cuspidata* are also placed in the genus *Theopsis* by Dr. Hu. Thus the yellow flowered camellia should cross with both *C. reticulata* and *C. japonica*, yielding F₁ hybrids comparable in fertility to Ackerman's 'FRAGRANT PINK'. Such hybrids would, no doubt, lack the full expression of yellow color and would have to be intercrossed in order to combine yellow color with large flower size, texture, and petal number.

Though the editor of the 1968 *Yearbook* mentions the restrictive policy of the Chinese government regarding the export of various plants, correspondence with Dr. Hu should be initiated by the Northern California Camellia Society Research Committee. Possibly, exchange of breeding material and a monetary consideration might make it possible for him to at least send seeds of such a valuable species.

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—ACS—

Generating Camellia Floral Fragrance

KEN HALLSTONE
Lafayette, California

Through an article in the International Camellia Society's 1974 *Bulletin*, a plea was made for hybridizers throughout the world to contribute their efforts in the struggle for that show-quality flower possessing pleasing fragrance.¹ Hybridizers from five different countries other than the United States responded and have now embarked on a breeding program for floral fragrance.

This is a summary of some of the progress made regarding camellia fragrance as it has emerged over the past fifteen years, plus a current report of the work done by sixteen known hybridizers for fragrance. If any person who has been hybridizing for fragrance was left out, it was not intentional. If you were omitted, I would be pleased to hear from you and learn about your work.

FLORAL FRAGRANCE

At least seven species of camellia possess some fragrance; namely, *C. fraterna*, *C. kissi*, *C. lutchuensis*, *C. miyagii*, *C. oleifera*, *C. tsaii*, and *C. sasanqua*. However, it is generally agreed that the *C. lutchuensis* fragrance is the most pleasing, consequently, it has been used more extensively by hybridizers.

In 1960, Howard Asper made one of the first crosses using this species. *C. saluenensis* was the seed parent and *C. lutchuensis* was the pollen parent.² The resulting plants were seed-sterile but possessed viable pollen. The next few years saw Dr. William Ackerman at the U. S. Plant Introduction Station, Glenn Dale, Maryland, and Dr. Clifford Parks, then at the Los Angeles State and County Arboretum, make numerous hybrid crosses using fertile but not necessarily fragrant *C. japonica* cultivars as seed parents and *C. lutchuensis* as the pollen parent. When blooming, the first generation hybrids were found to be fragrant but were seed-sterile and often possessed a low percentage of viable pollen. This reduced the usefulness of the F₁ hybrids as breeding parents. Dr. William Ackerman's report in the A. C. S. Yearbook 1973³ gave us new hope in overcoming this problem when he developed his cytochimera of 'FRAGRANT PINK', which increased the viable pollen from 5% to 77% and hopefully would make it a possible seed setter. Subsequent work using pollen from fragrant F₁ *C. lutchuensis* hybrids onto his 'FRAGRANT PINK IMPROVED' are being done with the hope that the resulting triploids will carry genes for floral fragrance. Crosses made by Dr. Parks, using two known fragrant *C. japonica* cultivars, such as 'SWEET DELIGHT' × 'FRAGRANT JONQUIL', failed to enhance the fragrance. Dr. Robert Cutter, in the mid-sixties, worked heavily with the number two and number three rated fragrant species *C. fraterna* and

C. tsaii. They crossed readily with *C. reticulata* but while they increased the flower size they lost most of the fragrance. All attempts to put *C. lutchuensis* onto *C. reticulata* failed until 1969 when Frank Pursel of Oakland, California, crossed successfully *C. reticulata* 'CRIMSON ROBE' with *C. lutchuensis*.

Unfortunately, the early crosses made of *C. japonica* × *C. lutchuensis* were with nonfragrant japonica cultivars, such as Dr. Parks No. 69 (2)—(*C. japonica* 'REG RAGLAND' × *C. lutchuensis*). To remedy this, a search was made by Dr. Ackerman and Ken Hallstone to collect as many as possible of the fertile fragrant japonica cultivars for use as seed parents with the *lutchuensis* hybrids. Dr. Ackerman's collection in the U. S. Arboretum, from which material is available to seriously interested hybridizers, numbers over sixty. Ken Hallstone's available fragrant cultivars in Lafayette, California, are more than forty. Tom Savige is anxiously anticipating the development of similar collections in a newly-acquired five-acre camellia garden near Olinda in Mount Dandenong area of Victoria, Australia, and the E. G. Waterhouse Gardens in Sydney.

No success so far has been reported with intercrossing *C. lutchuensis* hybrids, but backcrossing them to *C. japonica* produced some good results, such as the late Dr. Cutter's 'ALICE CUTTER'—(*C. japonica* 'MRS. BERTHA HARMS' × 'PARKS' hybrid No. 69 (2)—(*C. japonica* 'REG RAGLAND' × *C. lutchuensis*).

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REPORTS ON HYBRIDIZING FOR FLORAL FRAGRANCE

Australia—Tom Savige, Lavington, N. S. W.

Hybridizing for fragrance has been meager to date. Tom mentions Mrs. Alice Spragg's work in Miranda, N. S. W. She used *C. miyagii*, a species with a pleasant light fragrance, with some of the fragrant sasanquas. The resulting flower fragrance was somewhat improved over that of either parent. Tom, an ardent hybridizer, now has plants of most of the significant fragrant hybrids developed in the last fifteen years and has embarked on a program for breeding for floral fragrance. Australia has several fragrant japonica clones available to him. Most widely known are 'BRODIE'S' PINK', 'ODORATISSIMA' and H. K. C. Dettman's 'GLAD RAGS' and 'PARTY GIRL'.

England—Dr. James Smart, Barnstaple, Devonshire

Inquiry revealed that there are no known breeders for floral fragrance in England at this time, but Dr. Smart has now acquired many of the basic fragrant hybrids that have been developed and will soon be ready to start. *C. japonica* 'BARBARA MARY' and *C. saluenensis* 'BOW BELLS' both possess some fragrance and will figure in his program.

Japan—Yoshiaki Andoh, Kobe

In Japan, little work has been done of controlled crosses for fragrance. However, they have many clones that possess fragrance. Of the *C. japonicas*, Mr. Andoh recommends for use as a seed parent in any breeding program for fragrance the following group of four *Higos*:

'AKATSUKI-NO-KAORI' (Fragrance in the Dawn)

Soft Pink turns White as the bloom ages. Medium to large, single. Leaves $3\frac{1}{2}'' \times 1\frac{1}{2}''$, compact upright growth.

'NIOI-FUBUKI' (Scented Snowstorm)

White streaked Rose Pink, medium to large, single with cluster of gold stamens. Leaves $3\frac{1}{2}'' \times 2''$, compact upright growth.

'TAMA-IKARI' (Precious Anchor)

Pale Pink at base shading to deeper Pink at edge, small, single, non-Higo type. Leaves $3\frac{1}{2}'' \times 2''$, compact upright growth.

'TENKOH' (Fragrance in Heaven)

Pale Pink, medium, single.

Mr. Andoh states, "The quality along with the quantity of the fragrance of the strain of 'NIOI-FUBUKI' are of the first level of all scented camellias in Japan. I feel it is equivalent to that of 'KRAMER'S SUPREME'". Besides the fragrance it sets seeds readily.

New Zealand—Jim Finlay, Whangare

Some work has been done in the field of fragrance using *C. fraterna*, but the flowers are small and insignificant. Jim has three young plants of *C. japonica* 'BETTY SHEFFIELD SUPREME' $\times$ *C. lutchuensis* plus three more of *C. japonica* 'TIFFANY' $\times$ *C. lutchuensis*. In a couple of years he will be able to assess the value of these

hybrids. He reports his best fragrant japonicas for use as seed parents are Vic Corkill's seedlings 'HIGH CHAPPERELL' and 'BLACK PEARL'. Jim has made one attempt, without success, to produce a colchiploid of the 'TIFFANY' $\times$ *C. lutchuensis* cross.

Portugal and Spain—Leslie Rigall, Esposende, Spain

The field of breeding for floral fragrance in camellias is a new concept in these countries. Mr. Rigall has acquired and introduced the following fragrant japonica clones: 'AROMA', 'FRAGRANT FRILL', 'FRAGRANT STAR', 'KRAMER'S SUPREME', 'TAFFETA TUTU', and 'VIOLET BOUTQUET', as well as the hybrids, 'ALICE K. CUTTER', 'FRAGRANT PINK IMPROVED', 'VIRGINIA W. CUTTER' and several unnamed hybrids.

United States—Dr. William Ackerman, U. S. Arboretum, Washington, D. C.

Dr. Ackerman has concentrated his activities on floral fragrance in camellias as follows:

1. Collection and propagation of *C. japonica* cultivars which possess some degree of floral fragrance.⁴ These are being used as seed parents in crosses with the best of the *C. lutchuensis* hybrids, i.e., 'FRAGRANT PINK IMPROVED' and a number of unnamed hybrids.
2. Re-constructing original F_1 hybrid crosses involving *C. lutchuensis*, but this time using fragrant flowered *C. japonicas* instead of nonfragrant parents.
3. Combination of floral fragrant hybrids with cold-hardy clones. Example of this is the hybrid A-500 which brings together the cold hardiness of 'FROST QUEEN' and the fragrance of 'FRAGRANT PINK'. The flower is Rose Pink, with pale cream stamens, golden yellow anthers, semi-double, 14 petals, 4" across, leaves $3'' \times 1\frac{1}{2}''$, vigorous upright growth.
4. Breeding for fragrance at the tetraploid level.
 - (a) Development of tetraploid hybrid complexes through crosses of *C. reticulata* $\times$ *C. japonica* $\times$ 'FRAGRANT PINK IMPROVED'.
 - (b) Attempt to establish a homozygous tetraploid for fragrant genes through anther culture of 'FRAGRANT PINK IMPROVED'.
5. Introduction of two fragrant hybrids.
 - (a) 'FRAGRANT PINK'—Deep Pink, miniature, peony form. Medium spreading growth. Fragrant. (*C. rusticana* 'YOSHIDA' $\times$ *C. lutchuensis*) 1968.
 - (b) 'CINNAMON CINDY'—Rose Pink, miniature, peony form. White petaloids and orange anthers. Deep cinnamon fragrance. (*C. japonica* 'KENYO-TAI' $\times$ *C. lutchuensis*) 1974.

Barbara Butler, Modesto, California

Barbara has assisted Dr. Ackerman in his search for and collection of fragrant camellia clones. Her work has consisted mostly of collecting pollen from various fragrant cultivars and applying it to known fragrant japonicas, reticulatas, or lutchuensis and its hybrids. She is launched on her fifth year and is anxiously waiting to

evaluate her blooms. Some of her interesting crosses include:

- No. 100 (japonica 'GWENNETH MOREY' × *C. lutchuensis*) 2 plants
- No. 103 (japonica 'BETTY SHEFFIELD SUPREME' × *C. lutchuensis*) 4 plants
- No. 131 ('WILLIAM HERTRICH' × Cutter D 3 (4)—(japonica 'MRS. BERTHA HARMS' × Feathers' 'SALAB'))

Dr. Robert K. Cutter, Berkeley, California

The late Dr. Cutter's early work was with the fragrance of *C. fraterna* which he was about ready to abandon. In his later years he concentrated on the fragrances of *C. lutchuensis*, Dave Feathers' 'SALAB', possessing the fragrance of hybrid 'APPLE BLOSSOM', and *C. tsaii*. In 1972, he registered his two best fragrant flowers; namely, 'ALICE K. CUTTER' and 'VIRGINIA W. CUTTER'. Both possess a high percentage of viable pollen but at this point are questionable as seed parents. One other of his hybrids warrants attention: Cutter D 3 (4)—(japonica 'MRS. BERTHA HARMS' × Feathers' 'SALAB')—(hybrid 'APPLE BLOSSOM' × *C. saluenensis*). This is a beautiful, bushy plant with leaves 5½" × 2½", flowers 5" across, rose pink, heavily veined, single, with pleasing fragrance. Best of all, it sets seeds readily. At this writing, 148 of his latest and most promising backcrosses have yet to bloom. Perhaps the one he was looking for is among them.

Toichi Domoto, Hayward, California

Searching for a fragrant miniature, Toichi crossed *C. lutchuensis* × *C. japonica* 'TINSIE' resulting in two plants with single, white, miniature flowers and a reasonable amount of lutchuensis fragrance. His other two plants are anemone, soft pink, miniature flowers and with only slight fragrance. Attempts to backcross have been unsuccessful.

Dave Feathers, Lafayette, California

Dave reports that although he has been hybridizing for many years his first cross for fragrance was made in 1960 when he created a fragrant hybrid seedling he calls 'SALAB'.⁵ This plant, possessing the good fragrance of hybrid 'APPLE BLOSSOM', has been the basis for most of his fragrant crosses over the last ten years. In this time he has accumulated 179 plants, some controlled crosses, some O. P.'s, but all possessing various degrees of fragrance, viable pollen and seed setting ability. He lists his four most fragrant and desirable clones as follows:

- #5507—'SALAB' × O. P. Mostly double with open center. Red with bluish cast, 4" flower. Pleasing 'APPLE BLOSSOM' fragrance.
- #3690—'KRAMER'S SUPREME' × O. P. Typical though smaller Kramer's flower with good fragrance but hopefully a better seed parent.
- #3085 and #3086—Wild Reticulata × (hybrid 'BUDDHA' × *C. fraterna* F₂).
- #1681—Unknown seedling.

Ken Hallstone, Lafayette, California

I accepted from the Northern California Camellia Research Committee the entire Robert K. Cutter Memorial Fragrant Camellia Collection of 334 plants, given to it by Mrs. Alice Cutter and family in the fall of 1973. Plants developed since then with interesting potential are:

- K1 2 plants *C. japonica* 'SCENTSATION' × hybrid 'VIRGINIA W. CUTTER'.
- K16 4 plants Cutter D 3 (4)—(japonica 'MRS. BERTHA HARMS' × Feathers' hybrid 'SALAB') × *C. japonica* 'KRAMER'S SUPREME'.
- K28 1 plant Cutter D 3 (4)—(japonica 'MRS. BERTHA HARMS' × Feathers' hybrid 'SALAB') × Pursel #10 (*C. reticulata* 'CRIMSON ROBE' × *C. lutchuensis*).
- K38 1 plant Pursel #3—(*C. reticulata* 'CRIMSON ROBE' × *C. lutchuensis*) × *C. japonica* 'KRAMER'S SUPREME'.

Woodford Harrison, Berkeley, California

His work has been principally with the fragrance of 'APPLE BLOSSOM' from Dave Feathers' hybrid seedling 'SALAB' and *C. japonica* 'SCENTED TREASURE'. The best results have been with his crosses of japonica 'MRS. BERTHA HARMS' × 'SALAB'. One of these seedlings received the "Most Fragrant Seedling" award in the Northern California Camellia Society show in 1975. The flower is deep pink, semi-double with golden anthers, 3½" to 4" in size. He looks forward to seeing other blooms from this cross.

John Herndon, Sacramento, California

His contribution to fragrance comes from the cross he made with the interesting and sometimes slightly fragrant japonica 'BILLY MCCASKILL' × *C. lutchuensis*. It is a small deep pink anemone flower with pleasing lutchuensis fragrance. So far, it is seed sterile but has tested out 20% viable pollen.

Meyer Piet & Mel Gum, Southern California Camellia Society

Hybridizing together for several years, their first crosses for fragrance will bloom this year. The crosses were planned as working material for backcrossing and adding to them the lutchuensis hybrids. Much of their work has been with known fragrant japonicas. Most promising to date is 'FRAGRANT FRILL' × 'KRAMER'S SUPREME'. 'SMELLIE NELLIE', as they call it, an unknown japonica seedling with good fragrance and seed setting ability, has figured heavily in their work.

Dr. Clifford Parks, Chapel Hill, North Carolina

Dr. Parks, who has been in London for the past several months, was not available for a report on his latest work on floral fragrance. No summary in this field would be complete without mentioning his valuable work. In the early sixties, while at the Los Angeles State and County Arboretum, he became one of the pioneers in hybridizing for floral fragrance and contributed much to our

genetic knowledge of camellias. Progress reports of his work were published each year in the A. C. S. *Yearbook* from 1964 through 1968. Much credit must go to Dr. Parks for this comprehensive genetic study of the camellia.

Frank Pursel, Oakland, California

Efforts to cross *C. reticulata* with *C. lutchuensis* were unsuccessful until in 1969 Frank made a break-through with his cross of *C. reticulata* 'CRIMSON ROBE' × *C. lutchuensis*. The one pod produced twelve seeds resulting in twelve plants. A chromosome count (which proved to be 60) helped to verify the validity of the cross. The twelve plants have few characteristics of *C. lutchuensis* and only on warm days show a trace of fragrance. He has 98 one-year seedling plants as a result of backcrossing onto 'CRIMSON ROBE' and 37 seedlings as a result of backcrossing 'CRIMSON ROBE' onto the original twelve F₁ seedlings. Some of the plants of this latter cross, the F₂ seedlings, are showing a smaller leaf. He is anxiously waiting the blooming of these 135 plants to evaluate the results.

A First for Northern California

Awareness of and attention to floral fragrance was stimulated this past show season when three Northern California Camellia Societies provided in their shows a section for competition among the fragrant cultivars. Trophies were provided. Although the rules of competition varied, this was a first and is to be commended. **CAMELLIA SOCIETIES MAY TAKE NOTE—FRAGRANCE IS HERE TO STAY!**

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—ACS—

Camellia Hybrids in Great Britain

DAVID C. TREHANE *

Probus, Truro

It is impossible to write, for an American Journal, about hybrid camellias in Britain without widening international understanding. The climatic limitations and methods of cultivation in the two countries are so very different. As an active member of the International Camellia Society, and of Rotary International, I welcome the opportunity. I wish I could give more information than I am able to do.

To understand the market for camellias in Britain one has to realise that they are grown mainly as freegrowing bushes planted in the garden in a climate so unpredictable that it drove a visiting Australian to question why we go on trying! A few are grown in decorative containers mainly for their foliage, as features in formal gardens particularly (as Milton Brown knows) in London. An increasing number is grown in glasshouses in clay or plastic pots, but it is a minority.

Another point of difference is that we do not, mercifully, have flower blight so we welcome a flower that shatters. A plant of the fastigate 'CHARLES COLBERT' or of 'DREAM GIRL', always looks clean because the spent flowers have shattered. I am discontinuing 'PHYL DOAK' because its mass of fine-enough flowers stays on the bush as a brown mess.

Outdoors, a successful hybrid has to compete with a few hardy japonicas. Under glass it has to be better

than, or different from, the whole host of japonicas. 'SATAN'S ROBE' is an example.

Hardiness is much more than Wendell Levi's test of resistance to winter cold and I believe that French growers may have been misled about this. It is a measure of the camellia's ability to form flower buds in a variable, generally cool summer, plus the ability to retain the buds through a variable winter of alternating growth periods and frosts, down to 18 degrees on the Fahrenheit scale (-8 C.), and then the ability to open sizeable flowers of good form in the spring.

To us, California is a greenhouse! New hybrids coming over here with the roots washed free of soil have to be acclimatised, propagated and tested. I reckon it takes five years to ascertain the performance outdoors and the past three winters have yielded little useful information. It takes three years to assess a new hybrid under glass.

One of the reasons for these long trial periods is that not only the size but also the form of a hybrid's flowers may be altered by the temperature regime. 'FORTYNINER', a great cabbage of a thing under glass, becomes a neat three-inch anemone flower outdoors, still with its fine great leaves now quite out of proportion.

The prime influence on outdoor camellias for the British climate is *C. saluenensis*. Itself not so cold hardy as *C. japonica*, it is a much better maker of flower buds.

* Director, James Trehane & Sons, Ltd., Hampreston, Wimborne, Dorset.

'DONATION' is the measure of the value of *C. saluenensis*. Offspring of the marriage of *C. saluenensis* to one of the hardiest japonicas, 'DONCKELARIJ', it is a *williamsii* hybrid, hardier than either of its parents. 'BRIGADOON' is equally so and of better form. But the reverse cross, j. 'ALBA SIMPLEX' x *C. saluenensis*, the white hybrid 'FRANCIS HANGER', has a poor constitution. It will be interesting to see if 'ANGEL WINGS' is better.

The *C. japonica* parents of most of the earlier *williamsii* hybrids are not specified. These hybrids are mostly good, reliable single and semi-double pinks, the pink varying in intensity according to whether the pale or dark form of *saluenensis* (F. 24090) was used. They include 'J. C. WILLIAMS', 'ST EWE', 'MARY CHRISTIAN', 'CHARLES MICHAEL', 'MARY LARCOM', 'CITATION', 'LADY GOWRIE', 'CHARLES COLBERT', 'SAYONARA', 'DEMURE' and many others.

J. C. Williams at Caerhays Castle reached the peak of his achievements by crossing *C. saluenensis* with *C. japonica* 'LADY CLARE'. Of the two seedlings he named, both dark pink paeony flowers, 'GEORGE BLANDFORD' has a longer season and less blue in its make-up.

I suppose the first *williamsii* hybrid to reach the Honor Table in the U.S.A. was 'E. G. WATERHOUSE' with its valuable fastigate habit and formal double, pink flowers. Its sister seedling, 'SHOCKING PINK', lacks its appeal. The real breakthrough into *williamsii* hybrids of sufficient size and complexity to make them equally suitable for the highest honors on the show tables in California and the highest awards in Britain after trials outdoors came from Les Jury in New Zealand with 'ANTICIPATION', 'ELSIE JURY', 'DEBBIE', 'ELEGANT BEAUTY', 'WILBER FOSS', and 'GAY TIME', using selected parents on both sides. Outdoors in southern Britain 'ANTICIPATION' has six-inch blooms.

Felix Jury's 'WATER LILY' signals the advance in formal double *williamsii* hybrids. 'GALAXIE' shows that bicolors are possible; its striping is faint and the flower would hold more interest if it stopped at its charming rosebud stage. If I am right in assuming that its parent, 'FINLANDIA VAR.' is a virus-induced bicolor, 'GALAXIE' should interest the virologists because viruses are not usually seedborne. 'FINLANDIA' is not good in Britain; 'CONTESSA LAVINIA MAGGI', 'TRICOLOR', or 'EXTRAVAGANZA', which are hardier, have greater possibilities for breeding bicolors.

Two gaps in the *williamsii* hybrids remain—true reds and whites of all shapes. Les Jury's recently published hybrids may supply some reds and the Cornish 'CHINA CLAY' may lead in the whites.

Surely there is a lesson in this tale of progress. If one looks at 'MILDRED VEITCH', a petite pink anemone flower, and then at 'ELEGANT BEAUTY', a bold dark paeony camellia, both hybrids from *C. japonica*. 'ELEGANS' crossed with different forms of *C. saluenensis*, the conclusion must be that the parents on BOTH sides will repay close study and then careful selection for the desired purpose. Not half enough is known about the many forms of *C. saluenensis*, one of the most variable species of camellia. The large pinks 'ROSE BOWL' and 'MERRYNG GALS WORTHY', also the red 'ADMIRATION', remain, I believe, as yet unused for breeding. For temperate climates, all the *C. saluenensis* forms need to be crossed with the same hardy *C. japonica* in a comprehensive study of their potential. On the *japonica* side, the hardiest varieties of different forms and colors need to be identified.

There is evidence that the dominance of *saluenensis*, and with it the precocity, are diminished when *williamsii* hybrids are crossed back with *japonica* varieties—'WATZ TIME', a poor, reluctant thing; 'BLUE DAN-

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UBE', neat and effective but a little slow; and 'ROSE PARADE' ('DONATION' x *japonica*) a flaunting deep flower, are examples. It is perhaps worth noting the power of 'DONATION' to foster formal doubles. 'BLACK LACE' ('DONATION' x *C. reticulata*) is a compressed replica of 'ROSE PARADE'.

Sticking for the moment to the choice of hybrids for British gardens, I must draw attention to 'CORNISH SNOW'. J. C. Williams raised this superb landscape camellia from *C. saluenensis* x *C. cuspidata* in the 1940s. One reverse cross, 'SYLVIA MAY', has, through its seedling 'ROBBIE', been used effectively by Vernon James in raising 'BONNIE MARIE', 'DOROTHY JAMES', 'JIMMY JAMES' and 'JULIE.' One *C. japonica* x *C. cuspidata* hybrid, *C. Lammertsii*, cannot compete with 'CORNISH SNOW'. A newer one, 'CORNISH SPRING', pink, lends weight to a belief that there are unexploited opportunities in the use of *C. cuspidata*.

C. saluenensis shows its dominance over *C. reticulata* in their hybrid progeny. 'BARBARA CLARK', 'PHYL DOAK', 'SALUTATION', 'DR. LOUIS POLLIZZI' and 'INNOVATION' closely resemble *williamsii* hybrids in foliage, flowers and performance. Two of these are unrecognizable as the same camellias when grown outdoors and under glass. 'DR. LOUIS POLLIZZI' is a wavy, picotee (sweet pea) under glass; outdoors it loses most of its pink and is a small, 3-inch, anemone flower. 'INNOVATION' under glass is a tangle of puce petals; outdoors, it is a bold, deep,

well-defined paeony flower, lavender crimson, very long lasting and weatherproof. It may be that 'INNOVATION' gains substance from its 25% *japonica* blood and, in the same way, 'GRAND JURY' gains size from the 25% *reticulata* blood in its makeup.

There are two reverse crosses, *C. reticulata* x *C. saluenensis*, worth mentioning—'HIGHLIGHT' and 'INSPIRATION'. 'INSPIRATION' must be derived from the wild form of *reticulata* and ranks with the *williamsii* hybrids as a prolific, hardy camellia equal to 'DONATION' in size and superior to it in quality and color. 'HIGHLIGHT' is from 'PURPLE GOWN', a less hardy form of *reticulata*, and it is unable to hold its buds outdoors. It is fine under glass.

The *C. reticulata* x *C. japonica* hybrids are the problem children in the British climate. The expectation that by crossing the tender *reticulata* with *japonica* we should add to the giant foliage and flowers of *reticulata* the hardiness of *japonica* has not been realised. Magnificent under glass where they can be contained (and 'INTERVAL', 'OTTO HOOFFER' and 'VALENTINE DAY' are valuable in this respect) most of them—'BERNADETTE KARSTEN', 'ELSIE DRYDEN', 'MILO ROWELL' and 'PINK SPARKLE', for example, are neither as hardy nor so large outdoors as the "straight" *reticulatas* 'CAPT. RAWES', 'WILLIAM HERTRICH' and 'ARCH OF TRIUMPH'.

When *reticulata* is the pollen parent, greater hardiness is offset by the loss of that fine foliage and the variability indicates the need for careful selection of



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parents. For instance, in the same season and situation, 'DIAMOND HEAD' produced numerous brilliant starlike flowers no more than 2-3 inches across whereas 'ROYALTY' covered itself with flowers 5 inches or more across in perfect semi-double form.

Again I must return to *C. saluenensis* in two reliable hybrids, 'FRANCIE L' and 'LEONARD MESSEL' both much hardier than *C. reticulata* x *C. japonica* hybrids. 'LEONARD MESSEL' has flowers nearer to *reticulata* in form and was raised from *reticulata* wild form crossed with *williamsii* 'MARY CHRISTIAN'. This makes one wonder what would result from crossing *reticulata* with the more advanced *williamsii* hybrids of today.

There is one hybrid of unknown parentage which I want to bring in—'FREEDOM BELL'. This is no show flower but it never fails from February to June in the garden to supply the brilliant red which the *williamsii* hybrids lack.

If 'FELICE HARRIS' is a sasanqua cross it behaves like a good *williamsii* hybrid. The "Girls" certify their sasanqua origin by flowering from December to February when it is too cold to smell them outdoors. Fragrance is, indeed, not dispersed by any camellia below

—ACS—

60 degrees F, which limits them to the glasshouse. For Britain the more exotic hybrids, 'FRAGRANT PINK,' 'TINY PRINCESS,' 'CHRISTMAS DAFFODIL,' are charming greenhouse shrubs. 'CHINA LADY' is not worth house room.

The breeding of 'FRAGRANT PINK' is, I think, an object lesson. The objective, fragrance, was first defined; next the sources of fragrance were searched, and then, what was thought, wrongly as it happened, to be a source of hardiness was brought in and purposeful hybridisation carried through.

If we can accept that the same deliberate selection and discipline ought to be exerted in the pursuit of hardiness, we can more quickly reach the goal of more beautiful hybrids which are truly advances and not just evanescent novelties or mirages seen by a happy raiser. In this the International Camellia Society could well play a part in promoting trial grounds in all countries where camellias are largely grown. If this can be done (and it needs doing) the unknowing citizens of all those countries can be given that mixture of experience and assurance which encourages them to grow more camellias. Without it, they may sicken of an indigestible surfeit.

Random Thoughts About Hybridizing

WALTER F. HOMEYER, JR., M.D.
Macon, Georgia

One need not have any knowledge of genetics or have any definite objective in mind to derive a great deal of pleasure and achieve modest success through cross-pollinating camellias.

This is supposed to be a general discussion and it was suggested that I need not get into the more scientific aspects of hybridizing; this is extremely fortunate for both the reader and myself.

My hybridizing experiences have for the most part been confined to crosses between *C. japonica*, *C. granthamiana*, and *C. reticulata*, with a great deal of intra-specific crossing within the latter species. Initially I also tried *C. saluenensis*, but because of troubles with dieback in its progeny I abandoned its use.

If there were a basic plan in my breeding program it would be that, assuming I had two different varieties in which I felt that the flowers were attractive or had desirable characteristics, then why not encourage them to cross; certainly one would not help one's enemies to breed. The notable exception to this is that some single and semi-double flower forms are extremely

easy to work with; their "sticky stigma's" seem to beckon as one passes with pollen in hand. It would be useless to list those flower characteristics which I consider desirable, but big, "hairy", red flowers and "rabbit-ears" really turn me on.

Most of my hybrids fall into 3 categories about which I would like to make some general observations.

I. *C. Reticulata* (seed parent) x *C. Japonica* (pollen parent)

As the professionals point out, this is definitely the way to go when crossing these two species; however, the only *reticulata* that I personally have had any luck with is 'CRIMSON ROBE'. I realize that Cliff Parks has had great success with 'BUDDHA' and 'CORNELIAN' (alias 'CHANG'S TEMPLE' in that case), as have others. 'TREWITIN PINK' x *C. japonica* has set viable seed several times. 'PATRICIA COULL' ('BUDDHA' x *C. japonica*) in my limited blooming experience has crossed readily with *japonica*. 'VILLE DE NANTES', 'TOMCAT', and 'CLARK HUBBS' have been willing pollen parents. Thus far the progeny have been sterile as seed parents.

II. *C. Reticulata* x *C. Granthamiana*

'CRIMSON ROBE', 'TREWITIN PINK', 'BUDDHA', and less readily, 'CORNELIAN' are good seed parents; none of the crosses from 'BUDDHA' or 'TREWITIN PINK' have been notable or fertile, and their progeny have had flowers with poor substance. Two of the progeny from 'CRIMSON ROBE' have been fertile as seed and pollen parents, and have very desirable flowers ('PROMISES' and 'POP GEE'). They cross readily with *C. reticulata* but by

oversight haven't been crossed with *C. japonica* as a pollen parent yet.

III. *C. Japonica* x *C. Granthamiana*

Actually I have had only two successful crosses from this combination, yielding four seedlings; all had growth characteristics of both parents, and two of them have or have had yellow in the flower petals along with pink or lavender at the petal edges. Theoretically these progeny should be triploids, but root tip chromosome counts have revealed them to be aneuploids with 42-43 chromosomes; at any rate, they have all thus far been sterile in every way. 'FALLEN ANGEL' is the only cross of this parentage which at this time is considered to be worth naming.

FURTHER THOUGHTS

'BUDDHA' (*C. reticulata* x *C. pitardii yunnanica*) is considered a hybrid and has proven to be a most rewarding seed parent when crossed with the "Yunnan Reticulatas."

Among those registered reticulatas and hybrids with reticulata parentage the following also have seeded for me:

'WILLOW WAND'
'MANDALAY QUEEN'
'JUDY NORDAN'
'MOUCHANG'
'BRILLIANT BUTTERFLY'
'CARL TOURJE'
'CRAIG CLARK'

'SILVER MIST'
'TOM DURRANT'
'BERNADETTE KARSTEN'
'FIRECHIEF'
'PINK SPARKLE'
'TALI QUEEN'
'TALI QUEEN'

Intraspecific crosses among these varieties have provided a high percentage of seedlings with good flowering characteristics.

Air Temperature

This is the *single most important* factor involved in camellia hybridizing. A greenhouse is almost a necessity for anyone who wishes to hybridize and doesn't have a California climate. Camellia pollen is *not active* at temperatures below 60° F and when placed on the stigma will not germinate; fertilization will not occur. Sub-freezing temperatures will damage camellia seeds in their earlier stages.

In conclusion, there is nothing mystical about hybridizing; the technique is simple and easily mastered. Anyone can do it.

—ACS—

Objectives and Evaluation of New Camellia Varieties

JULIUS NUCCIO *
Altadena, California

The hybrid camellia not only excites the amateur collector and hybridizer but also the commercial nurseryman. After 40 years of growing camellias commercially, we at Nuccio's Nurseries are still not bored and

* Co-proprietor, Nuccio's Nurseries.

see many doors yet to be opened in the future. Therefore, please bear and share with me these few paragraphs—not on how to hybridize camellias, make chromosome counts, pollen storage and procedures, etc., but on the very practical business end of camellias.

What would be popular, what sells best, what varieties would be the most profitable? Let us consider objectives in camellia hybridizing from the grower's standpoint only. Number 1, of course, would be a new color—yellow or blue. A new color over cold hardiness and fragrance? Absolutely! Keep in mind I said hard camellia business. The first thing that attracts a customer is color. He will then ask if it is fragrant and then, perhaps, con-

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sider hardiness, growth habit, blooming season, etc., but color comes first.

As it now stands, at any top camellia show where hundreds or perhaps thousands of beautiful blooms are on display, you see but one primary color—red with all its variations, hues and tones. Also, every possible form of flower has been developed from singles to semi-double to rabbit-eared to peony to anemone to rose-form and rose-form double. The same is true of size of blooms. We have miniature, small, medium, large and very large, but always in red as the primary color. A great step forward would be yellow or blue with all their hues and tones.

Number 2 on the commercial want list would be more picotee color combinations (such as 'MARGARET DAVIS' and 'BETTY SHEFFIELD SUPREME') created from seed rather than mutations. Picotee blossoms are extremely popular but our mutations have a tendency to revert which makes it difficult for propagating and selling. Perhaps a picotee type from seed would be a more stable variety. Visualize a very large, rabbit-eared, semi-double, white with red or pink edges—or even a formal double with the same color combination. Either would certainly appeal to the general public and the connoisseur.

Number 3 (and this might sound like a step backward, but bear in mind that I am stressing the needs and opinion of a commercial grower). A good red, formal double is most needed—a japonica-type plant preferred.

A good, brilliant red, formal double with a good bushy, upright growth habit and an early to mid-season blooming period would rate extremely high on any commercial grower's list.

Number 4 on the list would be to breed more exciting varieties that would bloom from mid-October through January. Early mid-season camellias have been neglected. We have some varieties, and I am not referring to *sasanquas* which have been and are a grower's delight, but more of the *reticulata* and *japonica* types are needed. Of course, *sasanquas* that could be picked would certainly be welcomed because of their excellent growth habits, landscape value and tolerance of exposures.

Number 5 would be cold-hardiness. If we could develop a strain of camellia that would tolerate not zero temperature, but 10° without injury to plant or flower buds, it is obvious what this would mean to the commercial grower in volume of sales. The popularity of the camellia would be spread to every state rather than the limited areas in which they are now successfully grown.

Number 6—Fragrance. Needless to say, fragrance in all flowers has always been enjoyed as a pleasant feature, and until recent years has been totally lacking in the camellia. We now have a camellia species, *Lutchuensis*, which has a delightful fragrance. Even though the flowers are small, when the plants are in full bloom they add a great deal to a garden. Many lovely hybrids have

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been developed using *C. lutchuensis* as a parent and a great many are yet to come. These will all be welcomed. When we can develop fragrance in the larger, more textured type flowers then, and only then, will fragrance become a major selling point in camellias.

To conclude our objectives through hybridizing, it would be every camellia growers' dream come true (and not impossible) to develop a camellia with the foliage of a *japonica*, the vigor and exposure range of a *sasanqua*, the fragrance of *lutchuensis*, the flower style of a very large *reticulata*, the mass bloom of a *saluenensis* and, of course, *yellow*!

Evaluating new seedling camellias may differ slightly from one area to another, but a few set rules, I am certain, would pertain to the majority of growers such as conditions under which we do our judging. In order to evaluate a new camellia it is our policy, at Nuccio's Nurseries, to have at least 10 plants of a variety (preferably more). Any amount less than this would not be a fair test simply because of cultural differences that might occur when there are only 1 or 2 plants of the variety. As an example, over-fertilizing; a plant kept too wet (over-watering); or perhaps a plant that is allowed to go too dry—generally, poor culture. With 10 plants or more, all possible good features and all possible bad features become readily detected.

It is necessary to have at least 3 to 5 blooming seasons to test properly a new variety. This is always sad to the originator because of the length of time required. Camellias respond to climatic changes, so to be thorough and know the true blooming season and performance of a new variety 3 to 5 years are essential.

Another condition that we insist upon for good evaluation is that all testing be done under outside conditions (not under glass) and, of course, never treated with gibberellic acid. To judge accurately a new camellia for the trade, too many important factors are lost with gibbed blooms; namely, size and blooming season, the same being true with glass culture.

With the above conditions, *the following 5 points for evaluating* are used at Nuccio's:

Performance—Does it bloom well year in and year out without bud drop, bull-nose or bud blast? A variety that opens all its blooms shows top performance.

Distinction—New colors; larger blossoms; new flower styles; longer blooming season; different growth habit; different foliage—these would be distinctive.

Propagation—A fine new, distinct variety that performs well but must be reproduced through grafting will never reach great popularity in the trade. Camellias that strike root easily by vegetative cuttings are the true money makers for nurserymen. This is a most important factor to the commercial grower.

Growth Habit—The growth habit of a camellia determines how it must be merchandised. As an example, open and spreading growth habit would perhaps be

best on a trellis. Low growth can be used as a ground cover or cascade. The upright, compact growth habit is the most popular and most acceptable and has the largest sales potential.

Blooming Season—Camellias fill a void in the early fall and winter months, so whenever a new seedling blooms from October through January we consider this a most important quality. In conjunction with blooming season, we look for the bud-set qualities of a new variety—the ideal situation is for a camellia to set buds 2½ to 3½ years from rooted cuttings. A poor example of bud-set would be 'DEBUTANTE' which usually takes 5 years to set buds.

Another feature of bud-set that can affect the rating of a new camellia is cluster-bud—the setting of 10 or 15 buds per terminal. This is a poor characteristic as the general public will not take the time to disbud, thereby getting poor quality flowers.

After having grown and tested thousands of new varieties and seedlings during the past 40 years, we have found no short-cuts to evaluation—it still takes 3 to 5 years to properly test a variety and then another 5 years of propagating before the variety is ready for marketing.

—ACS—

Some Thoughts About Reticulata Hybrids

JACK CLARK
Auckland, New Zealand

Reflecting upon the last ten years or so of hybridization, it has occurred to me that perhaps if my own experiences and results are recorded it might save some future hybridist years of trial and error. Our present wide range of camellia hybrids has been largely the work of amateur plantsmen and a few dedicated professionals. Some credit must also be given Nature. I have been fortunate in having selected some good seed parents and, when time permitted, did some pollenizing and let nature do the rest, having previously learned to be patient in waiting for results.

Having propagated and grown many thousands of *C. japonica* for sale over a period of forty years, I eventually became interested in the few camellia hybrids available in New Zealand and other countries, having visited Australia and California many times. Unfortunately, this led to my acceptance and use of some camellia species and hybrids not true to name. Quite a number of hybrids have been classified as first generation crosses, by some well-known people in the Camellia world, who did not realize that the presumed species used was actually itself a hybrid.

During the year 1962, I travelled the principal camellia growing countries of the world and visited all the

hybridists known to me, checking their results in order to learn what had already been produced in the way of new hybrids. I found that many of the early hybridists had used the same species in their crosses, which produced very similar hybrids without achieving a new style or type generally. It was not until new species were introduced that really outstanding hybrids came into being and the theory that the crossing of certain species was not possible was thereby disproved.

Although we had Reticulata 'CAPT. RAWES' for many years prior thereto, when I saw the so-called Kunming Reticulatas in California for the first time it immediately occurred to me that fine hybrids could be produced by crossing these new Reticulatas with *C. japonica*. With the invaluable assistance of Howard Asper, Bill Wylam, Julius Nuccio and the late John Sobeck, I was able to obtain a number of camellia species new to me, including all the Reticulatas available. I returned home from California with seed from several different species and, where seed was not available, scion wood was obtained. A few years later they duly flowered. The inferior plants were disposed of, while a few of the better species were planted in "Eden Garden". *C. tsaii* and two forms of the Wild Reticulata are now doing well there. The remaining seedlings were tested at Titerangi, where I lived for fifty years.

One seedling had the style of *C. reticulata* although smaller and different than any camellia I had seen. This plant has produced many good hybrids both as a seed parent and pollen parent. Second and third generation plants are now producing seed, from natural pollinations. Their main feature is the early flowering habit. This year *sasanquas*, early *japonicas*, Howard Asper's "Girls" (*C. sasanqua*-'NARUMIGATA' × *C. Reticulata* hybrids—Ed.) and my seedlings above-mentioned are all flowering together.

It has been my experience that the selection of the seed parent is quite important in the matter of successful hybridization. New Zealand has considerable rainfall during the winter months; therefore, our plants do not produce seed as readily as in California, for example. Consequently, selection of a good seeder is a must, provided it has the qualities necessary to produce the desired results. One point to remember is that in a number of instances the first cross may be the only successful one. I say this because in some instances I have attempted a subsequent cross on a seedling *reticulata* hybrid and never again has that plant produced seed. Some hybrids and species have such dominant characteristics that, when used as a pollen parent, the results are disappointing.

When selecting a seed or pollen parent there are matters to be considered besides the production of a show-type flower. Also important are such qualities as the production of a good garden plant that does not need a specialist to care for it; good foliage and root

system, hardiness, ease of propagation, etc. Reticulata hybrids with japonica like foliage are hardier and will stand adverse growing conditions better than straight reticulatas. They will also propagate more readily from cuttings and, being free from virus, make a more attractive landscaping plant.

Over a period of many years, 'CRAIG CLARK' and 'JANET CLARK' have proven to be my best reticulata hybrid seed producers, while I consider 'KIWI TRIUMPH' the best all-around reticulata hybrid that Nature has produced from seed I have sown. The following of my reticulata hybrid seedlings have never produced seed for me: 'ANN PATRICIA', 'LISA GAEL', 'MAORI MAID' 'RHONDA KERRI', 'ROSS CLARK', 'TITIRANGI' and 'TUI SONG'. Apparently the above reticulata hybrids are not successful when used either as seed or pollen parents under New Zealand conditions. It may be that the previous cross was too wide as I have observed that, in a number of instances, the succeeding generation is sterile, although they are excellent flower plants.

I have a seedling from Descanso Gardens in Southern California which I call 'DESCANSO PITARDII' because it is not the same as the *C. pitardii* from Bodnant Gardens in England. The one from Descanso is a small, two-inch flower with reddish-orange stamens which discolor in two days. This has crossed naturally with 'CRAIG CLARK', which towers eight feet above the small ten-year-old "Descanso" *pitardii*. Seedlings from the latter were for many years used for understock because the affinity of scions and understock made them very suitable. Having now flowered seedlings from "Descanso" *pitardii* over three years, I have found that it produces fine reticulata-type hybrids, some being as large as six inches in diameter.

One of the early "Descanso" *pitardii* hybrids was planted in "Eden Gardens" and has been so much admired as a garden plant that it was given the name 'KIRI TE KANAWA', after the New Zealand star opera singer. However, it is not a champion show flower and so far has not produced anything exceptional from chance seedlings.

While it is a fact that the *C. reticulata* does not propagate readily from cuttings, some of the *C. japonica* × *C. reticulata* hybrids do. Where the seed parent has been *C. reticulata* and the hybrid has similar foliage and character, grafting is required for reproduction. In New Zealand, I find that good results are obtained by making a side graft on an unrooted cutting as soon as the spring growth hardens, which is then placed under a mist propagator. The stocks I use are 'BARBARA CLARK', 'BRIAN' and 'ANZAC', which I find are superior to *C. japonica*. The following hybrids propagate readily from cuttings with me:

- C. sasanqua* × *C. reticulata*
- C. saluenensis* × *C. japonica*
- C. japonica* × *C. reticulata*
- C. saluenensis* × *C. reticulata*



'WISHUWELL'

This is a *C. saluenensis* seedling, pollen parent unknown, originated by David L. Feathers. It seems quite cold hardy and does exemplify the cold-hardy hybrid of the *C. williamsii* type. This plant was in full bloom in the garden of Wendell Levi, Sumter, S. C.



'VALENTINE DAY'

C. reticulata 'CRIMSON ROBE' × *C. japonica* 'TIFFANY' originated by Howard Asper, Escondido, California.



'DR. CLIFFORD PARKS'

A cross of *C. reticulata* 'CRIMSON ROBE' x *C. japonica* 'KRAMER'S SUPREME' made by Dr. Clifford Parks; named, grown and introduced by David L. Feathers.

Some years ago I suggested that the species relationship of certain hybrids could be determined by testing the odor resulting from scratching the bark of a twig. Reticulatas in particular have a very strong odor which serves as a sort of trace element. Discussing this with Dr. Harlan Lewis of the University of California and Dr. Bonner of the California Institute of Technology some years ago, both agreed that "gastography" might be used to determine parentage. Anyone with a good sense of smell should try scratching the bark of a reticulata, then the hybrids 'MARGARET WATERHOUSE' and 'SHOCKING PINK' produced by Prof. E. G. Waterhouse.

—ACS—

As the late Dr. Brian Doak used the same *C. saluenensis* as Prof. Waterhouse, his hybrids should have much the same genes. Mr. Les Jury's 'EXBURY' *C. saluenensis* has the same odor and his 'ELSIE JURY' hybrid likewise. I feel there are several *C. saluenensis* hybrids that should be re-classified as having *C. reticulata* × *C. japonica* hybridity. In my opinion, of all our present hybrids the most worthwhile are those resulting from the use of *C. japonica* pollen on *C. reticulata*. There are some of these that I have not yet seen, but certainly many of the established *C. reticulata* × *C. japonica* hybrids are hardier and better, with a different style.

Some Comments on Camellia Hybrids from a Commercial Grower's Point of View

NEVILLE R. McMINN *
Victoria, Australia

When invited by Dave Feathers to write a fairly short article on such a large and complex subject, my memory started going back over some 30 years of growing experience. I began as a young, enthusiastic "hobby" grower for some 9-10 years, following on as a commercial grower for 20 years in partnership with my wife Erica, who has become just as well known as myself in our specialized business. During this period, we have grown most of the better known Hybrid varieties of all types imported from England, New Zealand, U. S. A. and a great number raised in Australia, including several of our own at Camellia Lodge.

However, due to the shortness of this article, it will be impossible to mention these wonderful varieties individually, and their equally well-known creators, who deserve much credit for providing commercial growers with a substantial part of their overall business each year. Camellia Hybrids, particularly from the older established *williamsii* group (*C. saluenensis* × *C. japonica*), first introduced in England in the 1930's and Australia in the late 1940's, and continuing from New Zealand and the U. S. A. to the present time, have provided the largest range of varieties. These are closely followed by the Reticulata Hybrids (*C. reticulata* × *C. japonica* × *sasanqua* and other species). These, together with some older varieties raised in England, New Zealand and the U. S. A., are now rapidly building up to an incredible number of newer varieties being registered each year. This is creating an almost full-time job importing and patiently test-growing them before final evaluation and commercial release. I can only briefly mention the other delightful group of hybrids raised by crossing many of the *C.* species together, thus

producing many decorative and sometimes fragrant smaller-flowering varieties, which are becoming more popular and sought after each year, as they become better known and appreciated.

We, here in Australia, have found that most of the *williamsii* and *reticulata* hybrids are suitable for general landscaping, particularly as they are more sun hardy than many *japonica* varieties. Also many in the *williamsii* group are very suitable for espalier or semi-weeping purposes in suspended or supported containers or ground pegging and splaying over embankment or terrace-type gardens. The *williamsii* group as a whole propagate readily as rooted cuttings, which is how the bulk of *japonica* varieties are raised at Camellia Lodge. We find the *reticulata* hybrids graft easily, as do the general *reticulata* varieties, and some will propagate as rooted cuttings. Further trials are being made to see if more varieties can be raised this way.

From the actual growing side, both groups give excellent results, both for the commercial and private grower. Most of the *williamsii* varieties produce both long leader and lateral growth that is improved by terminal pruning, thus making a more compact bush. The *reticulata* hybrids as a group also produce vigorous growth, usually a little more compact if grown in plenty of light and less shade. We find that far less fertilizing is required, particularly with higher nitrogenous foods, as these tend to force far too much sap growth. Most *williamsii* hybrids are more tolerant to higher pH, i.e. neutral or alkaline-based soils, as well proven in England over such a long period where many counties have high alkaline top soils over limestone or chalk sub-soil or shale. The same applies to some areas in Australia and other countries.

* Proprietor, Camellia Lodge Nursery, Princes Highway, Noble Park.

The flowering habits of the hybrids are one of their major features, prolific bud set with earlier and consistent flowering for the *williamsii* varieties. With the *reticulata* hybrids, we get blooms equally as large or larger than most general *reticulatas*, with the added advantage of earlier and longer flowering. In the case of the *C. sasanqua* × *C. reticulata* hybrids, these start flowering in the Autumn period, when the *sasanquas* are in full bloom and extend into our mid-winter months, June and July, when the *japonica* varieties are also coming into good bloom.

In closing this article, I also wish to comment on the fact that here in Australia the vast majority of varieties in general are purchased for garden display only. Those grown for show purposes are a very small minority and

for this reason many of the "king-sized" blooms that people admire on the show benches are not necessarily the ones they prefer for their own gardens. For this reason, we here at Camellia Lodge have to evaluate new releases very carefully before growing and building up too much stock, as so many of the "newer" and often over-publicized varieties turn out to be no better, and far too similar to some older and well-proven varieties we have been growing for years, and we just do not bother to go on with them. We hope (perhaps) that in our time there may be some international control over registration of newer varieties, of all types, that will eliminate so many of the "look alike" that are increasing every year.

—ACS—

Camellia Species for Hybridisation

T. J. SAVIGE
Lavington, Australia

Sufficient hybridisation has now been done with a range of the available Camellia species to indicate the areas where future effort in this regard will be most fruitful. Considerable effort has gone into the various aims, such as improved flower form and size, increased substance and color range including yellow and blue, fragrance, cold hardiness, heat and drought resistance and suitable growing habits for landscaping and for tubbed plants. It is in furthering these general objectives that hybridisers have been mostly engaged.

In selecting stock to start a hybridising program, it is necessary firstly to have an objective and then to ascertain the factors dominant in the various species so that a selection can be made which will permit assembling a particular desired combination of characteristics by interspecific crossing. The various species which have already been proved, as well as some of

their successful hybrids, should be considered. The species about which most is known include *C. japonica*, *C. reticulata*, *C. saluenensis*, *C. granthamiana*, *C. sasanqua*, *C. fraterna*, and *C. cuspidata*. About the only object which may not be realised with these species is the introduction of the colors yellow and blue. However, when some of the presently unavailable species are brought out of Asia, even these aims may be met. The most important species from a breeder's point of view is *C. japonica*. It has dominated hybridisation in the past due to its great variability and the fact that amongst its many thousands of horticultural varieties is an enormous range of size, form, color, habit, foliage and vigor. From this range a breeder can select a basis for his particular target. In the horticultural varieties of this species can be found clones of high fertility which make good breeder plants, and it has been found to combine with a wide range of species. Amongst its hybrid groups are *C. x williamsii* when crossed with *C. saluenensis*; *C. x heteraphylla* when crossed with *C. reticulata*, and *C. x lammertsii* when crossed with *C. cuspidata*. There is also a group of fragrant hybrids obtained by crosses with *C. lutchuensis*, and the miniature, graceful Sawada hybrid from crossing with *C. fraterna*, "TINY PRINCESS". Most of these are first generation hybrids and the more exciting possibilities of F₂ and further generations of planned back-crossing and intercrossing remain to be done.

The second most important species, a companion from the Section Camellia, is the highly decorative *C. reticulata*. It has also crossed with a range of species, but probably the crosses with *C. japonica* have the most horticultural importance, and each season sees a further group of these magnificent hybrids on the market.



'LOLLIPOP'

C. cuspidata 'CORNISH SNOW' × *C. japonica* (unknown)
Photo courtesy T. J. Savige



'TERRELL WEAVER'

C. reticulata 'CRIMSON ROBE' x *C. japonica* 'VILLE DE NANTES', a cross made by Dr. Walter F. Homeyer, Jr. Propagated by Nuccio's Nursery. (Courtesy of N. Terrell Weaver.)



'FALLEN ANGEL'

A cross of *C. japonica* 'MIRIAM STEVENSON' x 'GRANTHAMIANA' made by Dr. Walter F. Homeyer; propagated by Nuccio's Nursery. (Courtesy of Dr. Homeyer.)



'LITTLE LAVENDER'

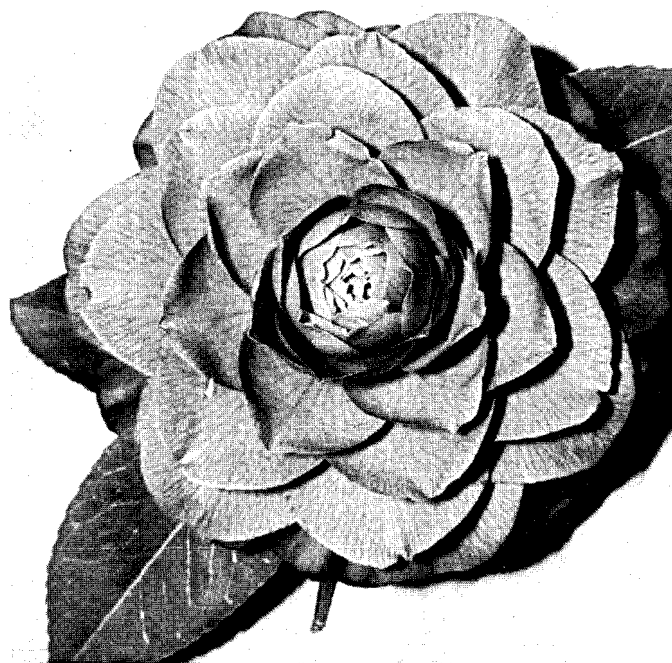
C. x williamsii 'PHILLIPA FORWOOD' × *C. japonica* (unknown)
Photo courtesy T. J. Savage

The variety 'HOWARD ASPER', *C. reticulata* var. 'TAMANAO' ('Cornelian') × *C. japonica* var. 'CORONATION', in particular turned attention to this combination. *C. reticulata* introduces into its hybrids the characteristics of improved substance and flower size as well as great vigor. An improvement in sun hardiness is often obtained; however, an open, leggy growth habit evident in the first generation can be a disadvantage.

Following *C. reticulata* in order of importance is *C. saluenensis*, also from Section *Camellia*. However, this species has intercrossed so readily with other species, in particular *C. japonica*, that uncontaminated material is virtually unobtainable. In the main, hybridisation with the intention of bringing *C. saluenensis* into combination, would have to be done per medium of the *C. x williamsii* hybrids, of which a very large range of varieties already exists. This species carries floriferousness, a high degree of fertility, and a widening of the range of pink tonings in the blooms. However, there is a loss of petal substance and a weakness for dieback in its hybrids. It has produced many colorful garden subjects, and can be useful to bring into combination otherwise incompatible species. The hybrids exhibit a surprisingly high degree of cold hardiness, generally higher than

the parent species, and in England in particular they are highly regarded as winter flowering shrubs, as they soon produce a further flush of flowers after a freeze. Varieties such as 'E. G. WATERHOUSE' and 'DONATION' are members of the cross with *C. japonica* (*C. x williamsii*) while 'BLACK LACE' and 'LEONARD MESSEL' also include *C. reticulata* in their make-up. There are also many magnificent horticultural varieties of the straight *C. saluenensis* × *C. reticulata* combination in the Doak Hybrids, 'PHYL DOAK' probably being the most outstanding. 'DR. LOUIS POLLIZZI' and 'FLUTED ORCHID' are others of this hybrid cross.

C. granthamiana, not having been so widely distributed due to its more recent introduction, has not yet been greatly used in hybridising. Its first hybrid released was the McMinn cross of *C. japonica* var. 'SPENCERS PINK' × *C. granthamiana*, named 'AUTUMN GLORY', from Australia. This was followed by the magnificent Nuccio *C. x tourjeii* var. 'BUDDHA' × *C. granthamiana* hybrid 'CHINA LADY' and the straight combinations with *reticulata* raised by Dr. Homeyer of Georgia and L. Shinault of California. *C. granthamiana* is a tetraploid, and combinations with diploid species show a high degree of sterility, while those with species of a higher ploidity exhibit varying degrees of viability. 'CHINA LADY' for example, will set seed back-crossed to either *C. granthamiana* or *C. reticulata*. *C. granthamiana* has proved a poor seed parent; most seed produced being of reduced viability, the seedlings proving difficult to raise on their own roots. However, this is an area where some attention is being given in the expectation of raising a seedling with increased fertility for use as a breeder. In the meantime most hybridising involving *C. granthamiana* has been done by using the species



'BLACK LACE'

C. x williamsii 'DONATION' × *C. reticulata* 'CRIMSON ROBE'
Photo courtesy T. J. Savage

as the pollen donor. Hybrids involving this species generally exhibit its large, handsome, reticulate leaves and its large corolla and huge boss of golden stamens. The plants are inclined to be open and exhibit their blooms well. Early blooming is a dominant characteristic. A rewarding path for hybridising would be to develop an F_2 generation back crossed to *reticulata*, then intercrossing selected early bloomers from this plant population with the expectation of developing fall blooming *reticulata*-like hybrids with an improved growth habit.



'PINK SPARKLE'

Chance seed reticulata-japonica hybrid parents unknown
Photo courtesy T. J. Savage

A somewhat similar path could be taken using the *C. sasanqua* derived hybrids. The basis here is the Asper hybrids 'DREAM GIRL', 'FLOWER GIRL' and 'SHOW GIRL'. These are *C. sasanqua* × *C. reticulata* and by following a similar program, hybrids with floriferous, early blooming characteristics and *reticulata*-like blooms could be obtained. However, it would be difficult to eliminate the petal-shattering habit of the *C. sasanqua* and their soft substance. While it is a poor subject for cold resistance, it will take heat and drought well, and *C. sasanqua* is well known for its rot-resisting root system, which makes it much used for grafting stock. *C. sasanqua* varieties have a range of growth habits including the dwarf size of 'TANYA', the pendulous weeping form of 'RED WILLOW', the fastigate 'MARIE YOUNG' and the spreading 'SHOWA SUPREME'. Colors range from the white of 'MINE-NO-YUKI' to the glowing red of 'YULE TIDE', while flower forms from the elegant single of 'SETSUGEKKA' to the formal 'CHANSONETTE' give the hybridiser a wide range of characteristics from which to select. However, this species, an hexaploid, does not combine easily outside its biologically similar species, *C. oleifera* and *C. miyagii*, and very few hybrids are yet listed.

The species *C. cuspidata* was one of the first used in hybridisation and its cross with *C. saluenensis* started the 'CORNISH SNOW' group of hybrid. Further crossings involving *C. japonica* were done using progeny of the putative *C. cuspidata* × *C. saluenensis* hybrid 'SYLVIA MAY', which produced some first-class ornamental varie-



'HOWARD ASPER'

C. reticulata 'CORNELIAN' × *C. japonica* 'CORONATION'
Photo courtesy T. J. Savage

ties such as 'BONNIE MARIE' and 'DAINTY DALE'. It can be said that, from the appearance of the 'SYLVIA MAY' seedlings, the evidence is strongly that this variety was more likely *C. cuspidata* × *C. × williamsii* and thus already had an infusion of *C. japonica*. While these hybrids involving *C. saluenensis* proved relatively fertile, the straight cross with *C. japonica* has proved more difficult and the resultant hybrids rather infertile. The first such cross was 'LAMMERTSI' 1952, followed by 'CORNISH SPRING' 1972. *C. cuspidata* should bring to its hybrids considerable floriferousness, daintiness of flowers, attractive small foliage, and a fastigate habit.

The small, graceful but shrubby species *C. fraterna* proved slower in forming hybrids, the first one listed



'FORTY NINER'

C. reticulata 'BUTTERFLY WINGS' × *C. japonica* 'INDIAN SUMMER'
Photo courtesy T. J. Savage



'MARY GOLOMBIEWSKI'

A cross made by Dr. Walter F. Homeyer, Jr. of *C. reticulata* 'BUDDHA' x *C. reticulata* 'CRIMSON ROBE'; propagated by Nuccio's Nursery. (Courtesy of Dr. Homeyer.)

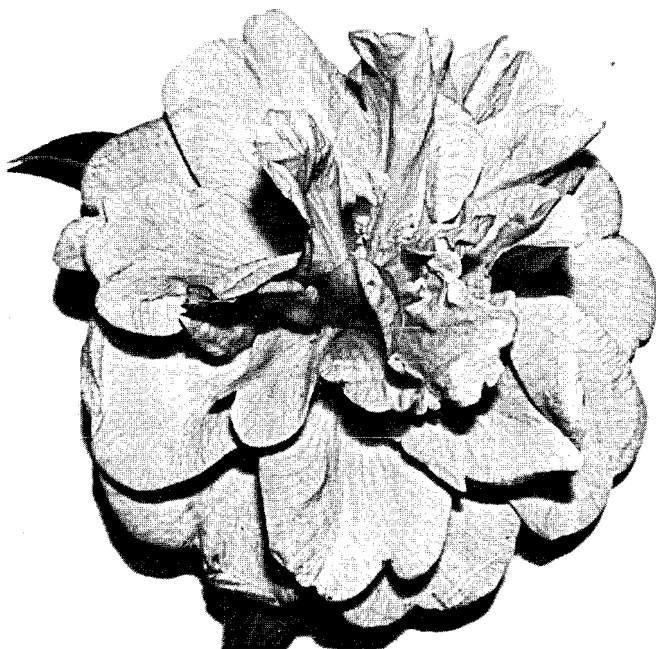


'POP GEE'

A cross made by Dr. Walter F. Homeyer of *C. reticulata* 'CRIMSON ROBE' x 'GRANTHAMIANA'; propagated by Nuccio's Nursery. (Courtesy of Dr. Homeyer.)

being Sawada's 'TINY PRINCESS', a cross with *C. japonica*. This hybrid has proved fertile and crosses readily back to *C. fraterna* and with *C. rosaeiflora*. 'CHRISTMAS DAF-FODIL' is a cross with *C. japonica*. *C. fraterna* has been found to hybridise with *C. reticulata*, forming small, attractive plants of good garden value. The species is also fragrant, and is being used in the program for developing scented Camellias.

Because of the time taken for seedlings to reach flowering size, a program involving a number of generations can cover quite a span of years. However, anyone becoming involved in this interesting pursuit now has the possibility of taking up where the earlier hybridisers left off, and developing the next generation hybrid based on the time-proven existing varieties.



'HIGHLIGHT'
C. reticulata 'PURPLE GOWN' × *C. saluenensis* (unnamed)
 Photo courtesy T. J. Savige
 —ACS—

Comment on Camellia Breeding

CLIFFORD R. PARKS *

When asked to give my opinions concerning the direction camellia breeding should take, I decided to discuss the projects that, if successful, will enhance the cultivation of this plant genus. Some of these areas of work are currently being undertaken by me or others, while some of the other programs outlined here are not currently underway. Nevertheless, if we are to solve some major problems involved in the cultivation, and particularly in the extension of the cultivation of camellias, we must get on with the job of breeding improved varieties.

* Department of Botany, University of North Carolina at Chapel Hill, N. C.

My work with camellias began abruptly at a time when I could barely distinguish *Camellia japonica* from *C. sasanqua*. We were presented with the breeding objectives of the Camellia Research Advisory Committee, and without much genetic or other biological information about the species of the genus *Camellia*, we set out to make crosses without further delay. The original four objectives included the development of blue and yellow flower color, increased fragrance, and increased cold resistance. It became apparent before our first progenies flowered that it was highly unlikely we would be able to breed either yellow, or blue-flowered clones from the parental stocks available to us. For new basic colors, then as now, we need some new genes—either through plant introduction or mutation. Until such time as we introduce new species into cultivation from the Orient, there is little we can do in the effort to develop new flower colors. Of course, always be on guard for the odd mutation or recombination (rare chance event) giving rise to a new flower color—but we cannot breed for such a rare happening. Color breaks in other major ornamental plants such as roses have usually resulted from interspecific hybridization with a related species carrying the new color.

Using pollen from the species *Camellia lutchuensis*, we were able, along with Dr. William Ackerman, to synthesize various slightly fragrant interspecific hybrids. However, attempts to select more fragrant clones of *Camellia japonica* from hybrid or open-pollinated progenies within this species have generally not met with much success, although the odd, often unexplainably fragrant, individual does crop up. The fragrance of such chance clones ('KRAMER'S SUPREME' for example), is expressed variably under different climatic conditions, but such cultivars are certainly, although somewhat subtly, fragrant. Recent attempts by Dr. Ackerman to make an extensive collection of such clones in one place and systematically intercross them, as compatibility relationships allow, with fragrant interspecific hybrids seems the most reasonable approach. With many workers now involved in the attempt to breed a fragrant camellia, slow, but steady, progress can be expected in this very important area.

The program of breeding more cold-resistant camellias initiated by the Camellia Research Advisory Committee has been extended and expanded at Chapel Hill in recent years. Reports on this work have appeared from time to time in the *American Camellia Yearbook*. A number of other workers have been independently involved in the problem of cold resistance including Bill Ackerman at the National Arboretum, Bob Armstrong at Longwood Gardens, Wendell Levi of Sumter, South Carolina, and a number of conscientious amateurs. I feel that too much stress cannot be put on programs which may lead to more cold resistant camellias. Success in this area may open up the possibility of camellia culti-

vation in new areas and climates—at least to a degree. More importantly, the products of these researchers will greatly improve the material available in the marginal areas of cultivation. Because of the erratic movement of cold fronts in the eastern United States, the marginal area extends from inland Georgia through the Carolinas to coastal New York.

Additional Breeding Objectives which should be Pursued: There are many more breeding objectives than the four major goals we undertook some thirteen years ago at the Los Angeles State and County Arboretum. Some other breeding goals which have been proposed or even undertaken by various workers will be mentioned here. A broader approach to hardiness (sun, heat and drought as well as cold hardiness) has been discussed on a number of occasions. Some tests have been set up to select for heat, sun and drought resistance, and some clones are clearly better than others in this regard; however, these problem areas are basically untouched.

It is clear from the reaction of camellia plants to diseases in botanic gardens and test plots that clones vary greatly in their susceptibility to dieback. There is less evidence that susceptibility to flower blight varies from variety to variety, but clearly there is some variation. Conceivably, there may be variation in susceptibility to tea scale and other insect pests. Continued study of the biology of camellia pests and diseases, as well as a breeding program to select for pest and disease resistance would be worthwhile undertakings.

Vigor, texture and shape are important general horticultural qualities of the plant which are carefully considered by some breeders when making varietal selections for introduction; however, many weak varieties of limited value are constantly being named and introduced. The growing failures which result from the attempts to cultivate these weaker cultivars may contribute to a loss of interest in the cultivation of camellias. For those who wish to make a japonica introduction based on floral qualities alone let me simply comment that with far more than 5,000 named clones of *Camellia japonica* around, it is difficult although not impossible, to come up with a japonica camellia which is really unique. Since many aspects of plant growth are often not apparent until a plant has developed for several years, clones once selected should be observed and field tested for a few additional years before naming and introduction. I have felt that a centralized varietal test (possibly two or three plots over the camellia belt and sponsored by the American Camellia Society) would provide invaluable information for all those selecting clones for introduction. Such a trial should include existing varieties as well as new introductions.

Cultivars resulting from interspecific hybridization have provided our most interesting new camellias in the last few years. An array of hybrids with excellent substance and brilliant colors have been produced from

numerous combinations between cultivars of *C. japonica* and *C. reticulata*. The more delicate flowered *C. x williamsii* hybrids have become a standard part of modern camellia collections. A few hybrid combinations involving other species have been introduced, but for the most part it is too soon to make statements concerning the value of these combinations. I am personally impressed with a number of hybrid groupings not yet generally cultivated, and I will say more about these later.

When considering these comments concerning camellia breeding, one should keep in mind that we have two different groups interested in this subject. The hobbyist selects spectacular flower types for greenhouse cultivation, and he has relatively little concern about the plant, while the professional horticulturist evaluates the qualities of the whole plant, viewing the flower as one very important characteristic. The small number of varieties which have been introduced by large nurseries have been quite different from those presented by hobbyists. Perhaps in camellias we need both kinds of cultivars—those with spectacular blooms intended for greenhouse culture, and those of a hardier more generally adapted nature best suited to cultivation out-of-doors in the landscape.

It is apparent that there is a great need to extend the gene pool for the cultivated camellias. We need new genes for flower color, fragrance, hardiness and disease resistance. Where will these new “genes” come from? Recently, my wife translated the section on *Camellia* from a new Chinese flora (see the *American Camellia Yearbook* 1975), and a number of the taxa described, not in our collections, may offer possibilities for major horticultural improvement. There are encouraging signs that some opportunities to introduce these may come up in the next few years, but it is yet too soon to become hopeful. Even after introduction, we will have to grow these plants, observe them, and determine what they contribute in hybrid combinations before we know what gains we have made—yet from the descriptions these species look interesting.

Breeding for Cold Resistance—Our Program. As I have already mentioned, our program was initiated in 1962 by the Camellia Research Advisory Committee. While the different workers in the area of cold resistance selection exchange materials freely, each group operates independently, and my comments here concern only the Chapel Hill test which is an extensive planting of intra-japonica hybrids, a few interspecific hybrids, mostly with *C. saluenensis*, and a collection of wild *Camellia japonica* clones from Japan. Most of our test material is cultivated in origin and much of it stems from hand pollinations made at the Los Angeles State and County Arboretum, Huntington Gardens and Descanso Gardens.

The field testing program was initiated with our first field plantings at the North Carolina Botanical Garden in 1968. Cuttings rooted the previous autumn were di-



'ELSIE JURY'

Hybrid (*C. saluenensis* x *C. japonica*
'PUKEKURA WHITE') Originated by L. E.
Jury, of New Zealand.



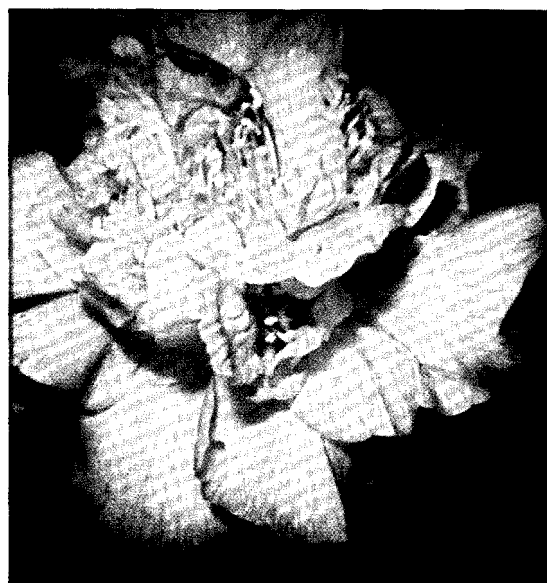
'CHARLEAN VAR.

Hybrid (*C. japonica* 'DONCKELARI' x hy-
brid 'DONATION') Originated by Wilmer
Stewart, Stewart's Camellia Nursery, Sa-
vannah, Georgia.



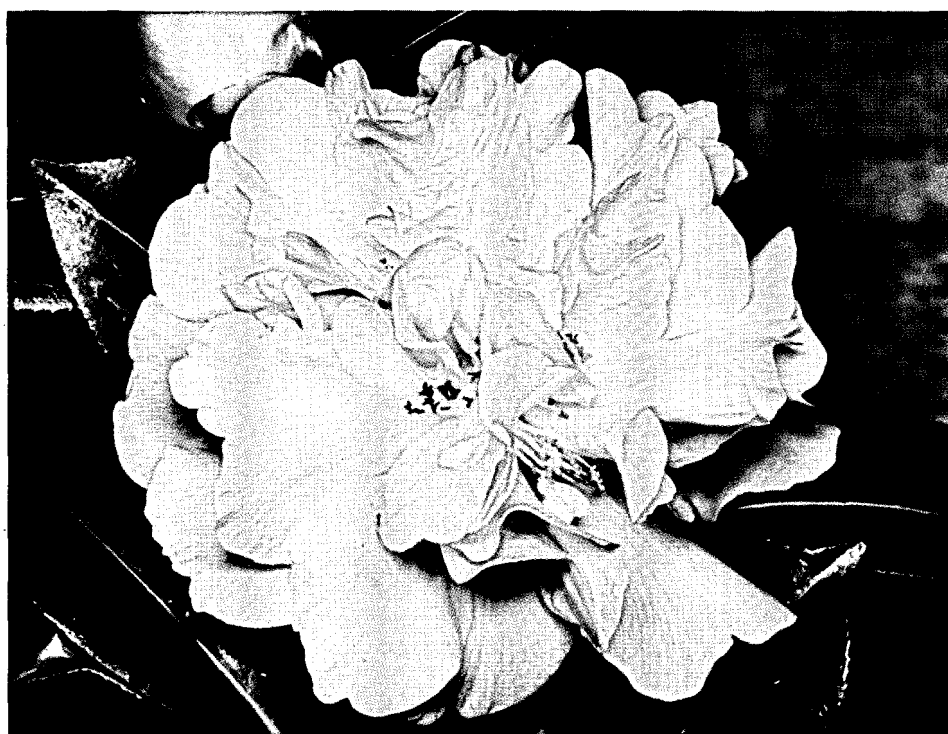
'VIRGINIA W. CUTTER' Hybrid

(*C. japonica* 'MRS. BERTHA HARMIS' × *C. lutchuensis* Ackerman's 63-32) Originated by the late Dr. R. K. Cutter.



'ALICE K. CUTTER' Hybrid

(*C. japonica* 'REG RAGLAND' × *C. lutchuensis*) Originated by the late Dr. R. K. Cutter.



'EL DORADO'

One of Howard Asper's hybrids, *C. pitardii* × *C. japonica* 'TIFFANY'. One of the top winners of hybrids with no *C. reticulata* parentage.

rectly field planted in the spring of 1968. Flower bud hardiness was noted for the next five seasons as blooms occurred. In Chapel Hill *Camellia japonica* foliage is normally adequately hardy, so our work is primarily a selection program for flower bud hardiness. We do record any variation in response of *C. japonica* foliage to cold, and we take particular note of the vegetative hardiness of the less hardy species and hybrids. In 1973, 300 plants (probably about 75 different clones since the plot was replicated) were selected for a second stage test located at the Carolina Forest camellia test plot. These plants have performed uniformly well during the last two seasons, but due to the abnormal mildness of these two winters, it has been impossible to carry out much further selection work with this planting. We do continue to observe that single and semidouble-flowered clones are more bud-hardy than those with more double flowers.

To be introduced they must pass the "cold test" for a minimum of two more winter seasons, and:

1. They must be of good horticultural quality in flower form, substance and color.
2. Plants must show good vigor and growth form.
3. Plants must not show excessive susceptibility to dieback.
4. Flowers must be held well in warm spring weather. (We are not selecting for heat resistance as such, but we do reject clones that show excessive heat damage to the flowers during warm periods in the bloom season.)

Many will wonder why the process of selection and introduction proceeds at such a slow pace. Major seasonal fluctuations as well as microclimatic variation make selection of hardy varieties a slow and sometimes uncertain business. Performance of a given clone in one winter may be an indication of its hardiness, but it is not a guarantee that it will exhibit hardiness in all seasons. In fact, an average performance record based on five consecutive winters would give the horticulturist a far better indication of potential hardiness. In the 1974-1975 winter season, 'DEBUTANTE' produced good quality flowers both early and late in the season, but as we well know, it is often quantitatively disbudded by severe winter cold. The difficulties, expense and long duration of field tests in many plant groups is well known, but in a number of cases the selections from such tests have extended the cultivation of certain plant groups. With camellias, the long-continuing tests of Mr. Wendell Levi (see his reports from time to time in the *American Camellia Yearbooks*) have been a valuable guide for the outdoor cultivation of camellias for numerous informed gardeners at the northern margins of the camellia belt.

Some New Hybrid Combinations: Interspecific hybrids are sometimes predictably intermediate between their parent species, but in many cases the hybrid presents a

surprising combination of parental traits. Years ago plant breeders crossed the cabbage with the radish hoping to develop a hybrid with a cabbage top and a radish root; however, their hybrid, *Raphanobrassica*, turned out to have a radish top and a cabbage root!

Lately, I have been particularly interested in combinations with the species *Camellia sasanqua* because it carries the valuable traits of good plant form and texture, some hardiness and fall bloom. The backcross hybrids *C. sasanqua* x (*C. sasanqua* x *C. reticulata*), are apparently as hardy as *C. sasanqua*, and along with their late autumn bloom season they carry flower qualities considerably improved over typical *C. sasanqua*. Two of these have aroused considerable interest, and they will be introduced soon. Because of the late autumn flowering period, these will be at their best in areas with a long mild autumn, and they should be particularly good for California. Cold may interfere with the primarily November bloom in some seasons in areas as cold as North Carolina. These two cultivars are being named after two prominent ladies of the central North Carolina area. The first is named after the late Mrs. Ann McCulloch Hill, civic leader and wife of Mr. George Watts Hill, Sr., prominent businessman and outspoken supporter of the University of North Carolina. The second is named after Mrs. Dorothy Spengler, indefatigable gardener and camellia enthusiast from Durham, North Carolina. Mrs. Spengler gave me much encouragement in the difficult early period in Chapel Hill when we were setting up the first test plots.

A number of other hybrid combinations which show promise of being desirable in the garden are now under observation. A hybrid between *C. japonica* and *C. sasanqua* is of interest because of its hardiness and its tendency to bloom in the middle of the winter. It is not surprising that this hybrid has some similarities with the well-known variety, 'DAWN'. A number of complex hybrids involving *C. japonica*, *C. saluenensis* and *C. rosae-flora* are prolific winter bloomers producing flowers in very bright shades of red and pink. A backcross hybrid, *C. reticulata* x (*C. sasanqua* x *C. reticulata*), produces very large flowers as freely as *C. sasanqua*. None of these, or others, have been observed to the degree that introduction can be considered, but they are under field and greenhouse observation.

Summarizing Comments:

1. Although breeding progress in a woody plant is slow, and we have to wait years to see the results of our hand pollinations, it is worth keeping in mind that crop breeders working with annual plants expect a breeding program to run 10-15 years from the onset of the program until varieties are introduced. We can expect an equally long period in camellia if new varieties are to be properly tested. At present, most of our new varieties have resulted from mass selection of open-pollinated progenies, and so in *Camellia japonica*, most of

our new varieties are minor variations on a theme.

2. On the other hand, in recent years many excellent cultivars have resulted from interspecific hybridization. Some quite interesting and different varieties have resulted from combinations between *C. japonica* and both *C. saluenensis* and *C. reticulata*. These and yet other hybrid combinations may offer new uses for camellias in the landscape, but because of the unpredictability of hybrids, they should be carefully observed and tested before introduction.

3. New cultivars which are carefully selected to be hardy and disease resistant will make it possible to extend the range of camellia cultivation in the United States, but more importantly, they will make it a more dependable component in the landscape in areas now marginal for camellia cultivation.

4. Finally, we must redouble efforts to introduce new *Camellia* species into Western cultivation. Although this objective seems difficult at the present time, we must not lose sight of this most important potentiality.

I would like to gratefully acknowledge those who have

—ACS—

Summation

What you have read is an account of the experiences, views and suggestions of some of the best informed people from each segment of the camellia world relating to camellia hybridization, their comments unfortunately restricted by the budgetary limitations to which a regular publication is subject. Within the foregoing pages we have tried to explain, illustrate and project the future of a rather complex subject that is still pretty much in its experimental stage and about which there is meagre recorded experience. Undoubtedly there are shortcomings largely due to space considerations, for a book could be written on this subject. Perhaps it would be helpful, particularly for reference purposes, to summarize the salient points that have been made and to add some commentary based upon the experiences of more than a third of a century of camellia hybridization.

To date, the evidence is clear that the two most successful combinations of species are: *C. japonica* with *C. reticulata* and *C. japonica* with *C. saluenensis*. In our classified list there are 28 of the former and 41 of the latter, but it must be remembered that the species *saluenensis* became available for breeding purposes much sooner than *reticulata*. Prevalent opinion is that the greatest potentialities lie with the combination of *japonica* and *reticulata*, although where cold weather is a factor the popularity of the *japonica-saluenensis* hybrid prevails.

We must take into account, when attempting any universal evaluation of camellias, the diverse conditions that are attendant to geographical differences. In addition to climate, tastes and usage of this outstanding flowering

supported our breeding work with *Camellia*. Two major contributors, Mr. George Watts Hill, Sr. and the late Dr. Robert K. Cutter, generously supported our work, particularly during the difficult period of establishing field plots in Chapel Hill. A number of camellia enthusiasts regularly help through the medium of the American Camellia Society. Recently, Dr. Walter Homeyer has been working to establish a foundation to support camellia research. With the help of Mr. Milton Brown, Executive Secretary of the American Camellia Society, a substantial grant was obtained from the Scotland-based Stanley Smith Horticultural Trust. Over the years, camellia breeders have freely exchanged materials, and recently the stocks provided by Dr. William Ackerman and Dr. Katsuhiko Kondo (directly from Japan) have been of great interest.

For the latter part of 1975, I am working at the ARC Biochemistry Laboratory at the Royal Botanical Gardens at Kew, Richmond, Surrey, England. I would particularly like to thank Dr. Tony Swain for making the Kew facilities available.

plant differ, as well. In the U. S. A., where petal blight and the show-type flower are major considerations, the one-piece, large bloom is gradually superseding the flower which lacks basal petal fusion (shatters), particularly if it is multi-petaled and small. Such beautiful, old-time favorites as 'ALBA PLENA', 'CANDIDISSIMA' and 'LADY HUME'S BLUSH' are gradually disappearing from the nurseries because of the work of cleaning up the hundreds of fallen petals from spent blooms. The flower which falls intact is much less of a problem from this standpoint, especially if it is large, in which case there will generally be fewer petals involved. In the rest of the camellia world, where petal blight is not a consideration, the shattering flower actually may be preferred. The fallen petals provide added color to the garden until they decompose and become mulch for the plant; furthermore, a camellia whose flowers fall without leaving dried up blooms or calyx on the plant has the advantage of self-grooming and is thus always neat appearing. Thus we have factors which on the one hand may be faults, while they are attributes on the other.

The need for development of a broader cultural range through more cold-resistant camellias is really very great and this should constitute a prime objective of the hybridizer. It is gratifying to a Californian to know that a number of people are devoting serious effort to this worthwhile undertaking even though not a major consideration here. The progress that has been made in the effort to produce hybrids with acceptable fragrance is also encouraging, but the yellow camellia appears to be as elusive as ever. Yet we do see possibilities in this

direction through the interbreeding of camellias which show latent indications by reason of orange and cream shadings, which certain seedlings of 'ELEGANS' and whites such as 'WHITE EMPRESS' have exhibited. This may prove to be a long-range undertaking, however, requiring a number of generations in which to gain the cumulative effect of that color tendency. Nevertheless, this project is worth the expenditure of a major effort, for such a development would open up a whole new vista such as happened with roses through the introduction of yellows, bronzes, coppers, etc.

In an attempt to clear up an important point, the question was asked some of our contributors if it makes any difference in the outcome which of two species is used as the seed parent in an inter-specific cross. Unfortunately, there has been no unanimity of opinion on this point. Theoretically it should not, yet the writer has reason to believe that it does, particularly where there is a material difference in the chromosome structure. In an attempt to produce a *reticulata*-like flower on a *japonica*-like plant he used the species *japonica* exclusively as the seed-bearer—no crosses were made the other way. The objective of a bushy, handsome, vigorous plant was obtained in several instances. Yet the flower and foliage have also been predominantly *japonica*-like in the first (F-1) generation. However, some F-2's are showing larger foliage, a thick-petaled, heavy *reticulata*-type flower of good size but with the more open growth characteristic of the *reticulata*. Back-crosses have been made but the results are not yet available. Thus open-pollinated seedlings of the *C. japonica* × *C. reticulata* hybrids show distinct improvement in the flower but at some expense to the growth habit. The F-2's of such hybrids may be presumed to be tetraploids (60 chromosomes), irrespective of which species was the mother plant, although this may also be subject to question. We badly need more information regarding the cell-structure of diploid × polyploid camellia hybrids, about which published information today is almost nil.

The desirability of producing seedlings that make attractive, heavily floriferous evergreens is obvious and



'ARCH OF TRIUMPH'
Seedling of *C. reticulata* 'WILD FORM'
Awarded ACS Aubrey Harris Award 1974

has been emphasized herein. Greater importance seems to be attached to this by our friends abroad, who value the camellia more for its garden ornamentation than we do in this country, why I really do not know. While unattractive plants can often be transformed by judicious and even heavy pruning, this takes time and effort besides requiring the sacrifice of many flowers. Thus the value of a good, natural growth habit is enhanced. This should be kept in mind always. The professional growers have given an outline of what they feel is required from a commercial standpoint, which should be considered carefully. The most successful amateurs are those who have developed a well-thought-out plan and have religiously adhered to it.

The importance of selecting a prolific seed-bearer, particularly when attempting an inter-specific or inter-generic cross, has been made and cannot be over-emphasized. Obviously, all other considerations are moot if the pollination is not successful. If the seed-parent has other attributes, so much the better, *but the first requirement is that it produce seed*. Some of the old-timers such as 'BERENICE BODDY', 'LADY VANSITTART', 'ROSARY', 'WILLIAM DOWNING', 'MRS. BERTHA A. HARMS' and 'TRIPHOSA', just to cover the color range, have excellent growth habit and other good qualities in addition to being prolific seeders.

The ambitious camellia hybridizer must have imagination, diligence, determination and patience for outstanding success, as well as keeping careful records not only of his accomplishments but of his failures as well. While hope and a little luck help, basically it all adds up to dedication to the task. It is not everyone who possesses these qualifications, hence more credit to those whose accomplishments have been meritorious.

Irradiation of hardwood plants in order to alter the cell-structure has been done successfully, particularly with fruits. Experiments now being conducted at the University of California (Davis) under Dr. H. P. Olmo, in conjunction with the Research Committee of the Northern California Camellia Society, in the early stages



'CRAIG CLARK'
Seedling of *C. reticulata* 'CORNELIAN'

appear to give promise of significant change. Should these indications of modification of foliage and growth habit be confirmed when the blooms appear—hopefully this coming season—we may have discovered another method of creating entirely new camellias. Neutron radiation and colchicine treatment have also been used successfully as a means of bringing about desirable change in ornamental plants. Thus the hybridizer of today has the advantage of being able to enlist the aid

of the scientist in his effort to improve upon Nature, either directly or indirectly through modification of the cell structure in such way as to make it possible to cross species or genera which have so far proven incompatible. The means and knowledge are at hand and it is up to the hybridizer to make intelligent use of them in his quest for “Camellias of the Future”.

DAVID L. FEATHERS,
Guest Editor.

—ACS—

Classification of Camellia Hybrids According to Parentage (*Registrations to December, 1974*)

The following Summary-Classification of Camellia Hybrids was prepared primarily for the guidance of the hybridizer and therefore includes only those seedlings as to which the knowledge of the species involved is complete (both parents known). This necessarily excludes many fine hybrids of natural (open-pollinated) origin and is based upon present available information as to named seedlings, only.

ORIGINATOR DESIGNATED BY THE FOLLOWING SYMBOLS:

1 = Howard Asper
2 = L. E. Jury
3 = D. L. Feathers
4 = Dr. Brian Doak
5 = Prof. E. G. Waterhouse
6 = Jack Clark
7 = F. W. Maitland
8 = Nuccio Nurseries
9 = Vernon James
10 = Dr. Clifford Parks
11 = B. J. Rayner

12 = Dr. Walter Homeyer, Jr.
13 = Edwards H. Metcalf
14 = McCaskill Gardens
15 = Mrs. M. J. Witman

A = Dr. Wm. Ackerman
C = Dr. R. K. Cutter
FJ = Felix Jury
W = J. C. Williams
O = Others

Saluenensis × *Japonica* *Japonica* × *Saluenensis*

'ANGEL WINGS' (O)
'ANTICIPATION' (2)
'BALLET QUEEN' (2)
'BOWEN BRYANT' (5)
'BRIGADOON' (O)
'CAERHAYS' (W)
'CHARLES MICHAEL' (W)
'CITATION' (O)
'CHARITY' (2)
'DAINTINESS' (2)
'DEBBIE' (2)
'DEMURE' (3)
'DONATION' (O)
'E. G. WATERHOUSE' (5)
'ELEGANT BEAUTY' (2)
'ELSIE JURY' (2)
'GALAXIE' (13)
'GEORGE BLANDFORD' (W)
'GLORY OF CANTERBURY' (13)
'HUNTSMAN' (2)
'J. C. WILLIAMS' (W)

'JULIET SPENCER' (2)
'KIA ORA' (2)
'LADY CUTLER' (2)
'LADY GOWRIE' (5)
'MARGARET WATERHOUSE' (5)
'MARY LARCOM'
'MILDRED VEITCH' (O)
'MIRAGE' (2)
'MY DIANE' (2)
'NARIDA' (2)
'PINK CASCADE' (11)
'RICHARD CLERE' (11)
'SATIN GOWN' (2)
'SAYONARA' (5)
'SHOCKING PINK' (5)
'SENORITA' (2)
'SOUTH SEAS' (FJ)
'WILBUR FOSS' (2)
'WATER LILY' (FJ)
'WYNNE RAYNER' (11)

Reticulata × *Japonica* *Japonica* × *Reticulata*

'ARBUTUS GUM' (7)
'AZTEC' (1)
'BERNADETTE KARSTEN' (7)
'CAPRICIOUS' (12)
'CRIMSON CROWN' (O)
'DIAMOND HEAD' (3)
'DOLORES HOPE' (O)
'DR. CLIFFORD PARKS' (10)
'DREAM CASTLE' (8)
'FIRE CHIEF' (1)
'FORTY NINER' (1)
'FOUR WINDS' (1)
'HAROLD L. PAIGE' (O)
'HOWARD ASPER' (1)
'INTERLUDE' (3)

'JOAN DIBBLE' (15)
'JOHN TAYLOR' (7)
'LASCA BEAUTY' (10)
'MILO ROWELL' (1)
'OTTO HOPFER' (O)
'PINK SPARKLE' (7)
'ROYALTY' (O)
'SILVER MIST' (7)
'TEMPLE MIST' (7)
'TERRELL WEAVER' (12)
'VALENTINE DAY' (1)
'VANATA' (3)
'VANATE' ACQ
'VANNINE' (3)

Saluenensis × *Reticulata* *Reticulata* × *Saluenensis*

'ANZAC' (6)
'BARBARA CLARK' (6)
'BETTIE DURRANT' (4)
'DR. LUIS POLLIZZI' (O)
'FLUTED ORCHID' (3)
'HIGHLIGHT' (2)

Japonica × *Hybrid*

Hybrid × *Japonica*
'BLACK KNIGHT' (14)
'BLUE BLOOD' (14)
'BLUE DANUBE' (14)
'BONNIE MARIE' (9)
'CHARLEAN' (O)
'CHRISTMAS DAFFODIL' (15)
'CREATION' (14)

Japonica × *Cuspidata* *C. lammertsii* (Hybrid L)

Japonica × *Lutchuensis*
'ALICE CUTTER' (C)
'VIRGINIA CUTTER' (C)

Pitardii × *Reticulata*
Reticulata × *Pitardii*
'BUDDHA' (China)
'CARL TOURJE' (O)
'CONFUCIUS' (China)

Reticulata × *Granthamiana*
'LOIS SHINAU' (O)
'POP GEE' (12)
'PROMISES' (12)

Saluenensis × *Hybrid*
Hybrid × *Saluenensis*
'GRAND JURY' (2)
'LETITIA MAY' (6)
'ROSS CLARK' (6)
'SANDY CLARK' (6)

Sasanqua × *Hybrid*
'FELICE HARRIS' (1)

Hiemalis × *Vernalis*
'WINSOME' (14)

Saluenensis × *Cuspidata*
'CORNISH SNOW' (W)

Rosaeflora × *Hybrid*
'WIRLINGA BELLE' (O)

Reticulata × *Hybrid*
Hybrid × *Reticulata*
'BLACK LACE' (O)
'CALEDON' (O)
'INNOVATION' (3)
'LILETTE WITMAN' (12)
'LEONARD MESSEL' (O)

'INAMORATA' (O)
'INSPIRATION' (O)
'OTARA ROSE' (4)
'PHYL DOAK' (4)
'SALUTATION' (O)
'SUNNINGHILL' (6)

'DOROTHY JAMES' (9)
'JIMMY JAMES' (9)
'JULIE' (9)
'POLARIS' (O)
'ROSE PARADE' (8)
'WALTZ TIME' (14)

Japonica × *Fraterna*
'TINY PRINCESS' (O)

Japonica × *Granthamiana*
'AUTUMN GLORY' (O)
'FALLEN ANGEL' (12)

'EMILY KATE CAPLE' (O)
'KIRI TE KANAWA' (6)

Sasanqua × *Reticulata*
'DREAM GIRL' (1)
'FLOWER GIRL' (1)
'SHOW GIRL' (1)

'SOUTH PACIFIC' (6)
'TITIRANGI' (6)
'VALLEY KNUDSEN' (1)

Pitardii × *Japonica*
'EL DORADO' (1)

Rusticana × *Lutchuensis*
'FRAGRANT PINK' (A)

Japonica × *Sinensis* *
'PINK TEA' (3)
* (Assamica)

'MARY GOLOMBIEWSKI' (12)
'ROB ROY' (O)
'SATAN'S ROBE' (3)
'TEMPLE FESTIVAL' (O)

*Nashville, Tennessee Welcomes
American Camellia Society
1976 Annual Meeting*

March 4-5-6, 1976

COME TO MUSIC CITY, U. S. A.



*Home of the Grand Ole Opry and Opryland
for*

ACS' Thirty-first Annual Meeting

and

Camellia Show of The Middle Tennessee Camellia Society

Headquarters at Hyatt Regency Nashville, 623 Union St., Nashville, Tenn. 37219
(Across from Tennessee's Capitol)

Reservations should be made with Hotel by February 15, 1976. Designate Camellia Meeting.

The 31st Annual Meeting of the American Camellia Society at Nashville, March 4-6, 1976

PROGRAM

Wednesday, March 3

Registration and hospitality room at hotel, open at 5:00 p. m.

Thursday, March 4

9 a. m.-12 noon—Registration, Hyatt Regency Nashville—ACS Board of Directors meeting

12 noon—Buses leave for Lynchburg, Tennessee (75 miles south) for tour of Jack Daniel's Distillery, box lunch aboard. Happy hour and barbecue that evening at recreational facility nearby. Return to Nashville 10 p. m.

Friday, March 5

9-5—Registration at Hyatt Regency

10 a. m.—Bus tour to Parthenon, University Center, Capitol, etc. and on to The Hermitage, home of Gen. Andrew Jackson, for basket lunch at Cabin-by-the-Spring there. Return to hotel, 2 p. m.

5 p. m.—Bus to Opryland for dinner at Plaza Restaurant and performance of Grand Ole Opry, 8 p. m.

Saturday, March 6

9-12—Registration at Cheekwood

10:30 a. m.—Bus tour of Nashville (optional \$6—minimum 30 people)

11 a. m.—Bus for judges to Cheekwood

1:30 p. m.—Basket lunch for judges and wives at Cheekwood

Preview of show for ACS members only

12:45 - 5 p. m.—Shuttle bus from hotel to Cheekwood

2-5 p. m.—Camellia Show at Cheekwood

7 p. m.—Social hour at hotel

8 p. m.—Banquet and business meeting at hotel

* * * *

CAMELLIA SHOW

The Middle Tennessee Camellia Society Show will be held on Saturday and Sunday, March 6-7, in the Botanic Hall at the Tennessee Botanical Garden and Fine Arts Center at Cheekwood. It is sponsored by Third National Bank of Nashville.

Bring your blooms. *Cold storage will be available.* Entries will be received at Cheekwood on Saturday from 8 until 11 a. m. No distinction will be made between protected or unprotected, treated or untreated blooms.

The show will be judged by members of the ACS Board of Directors beginning at 11:30 a. m. A special preview for ACS members will begin at 1:30 p. m. The show will be open to the public from 2 until 5 p. m.

Trophies will be awarded to the most outstanding in five sizes of japonicas, to reticulata hybrids or reticulatas, to other hybrids, to tray of 3 same variety, to the local bloom, sweepstakes and runner-up. There will be a special class for blooms of Australian origin for those wishing to compete for the Australian-ACS trophy. The Court of Honor will comprise 14 runners-up to the first three classifications. Also there will be a new ACS trophy given by Harold Cawood of Americus, Ga. in memory of his wife, Arminta, who died July 5, 1975. This will be awarded each year at the show in connection with the annual meeting to the japonica of any size judged to be the most outstanding.

HEADQUARTERS

The Hyatt Regency in Downtown Nashville (across from the Capitol) will be headquarters. *Reservations should be made directly with the hotel* at 623 Union St., Nashville 37219. Reservations are assured until *February 15*. Rates are \$25 single; \$32 double.

The convention registration fee is \$65 for three days. Friday and Saturday is \$57.50; Saturday is \$30. Early registration (before Feb. 15) is \$55 for three days; \$47.50 for two days; \$30 Saturday. *Check should be made to Middle Tennessee Camellia Society Convention Fund and sent to Mrs. A. B. Cooper, 4708 Granny White Pike, Nashville 37220.*

Bus transportation will be provided to all events. As early March weather in Middle Tennessee is unpredictable and in view of several out-of-door activities, it is advisable to come prepared for either spring or winter.

For Show Schedule write to G. Ernest Harrison, Show Chairman, 102 Lauderdale Rd., Nashville, Tenn. 37205. More details also in February 1976 *Journal*.

Cheekwood—Nashville's Botanic Beauty

ELIZABETH (Mrs. A. B.) COOPER

Perhaps no camellia society has as ideal a place to hold a show and ironically has as few camellias as does the small group in Nashville, Tenn. known as the Middle Tennessee Camellia Society. Being on the fringe of the camellia-growing area with a likelihood of zero weather at prime camellia time, it is imperative for growers to have a substantial greenhouse which is a horse of a different color.

The Tennessee Botanical Gardens and Fine Arts Center at Cheekwood, the site of the Middle Tennessee show the first weekend in March, is located in a lovely hilly western suburb of Tennessee's Capital City and was once the Cheek estate. With its 60 room mansion and 55 acres of rolling woodland it was opened to the public in May, 1960 when Mrs. Walter Sharp and her late husband deeded the property to a private corporation. Mrs. Sharp is the former Miss Huldah Cheek, daughter of the late Mr. and Mrs. Leslie Cheek who built Cheekwood in 1929. Mr. Cheek was an heir of the late Joel Cheek, originator of Maxwell House Coffee named for the famous hotel in down-

town Nashville built before the War Between the States, damaged by fire Christmas Eve 1961 and subsequently demolished. On its site now stands Third National Bank, sponsors of the Middle Tennessee Society show.

The architect for Cheekwood, Bryant Fleming of New York, who was also a landscape artist, accompanied the Cheeks to Europe to select fabulous and unusual furnishings for the house and grounds. These items are there today.

Since becoming a civic enterprise and until 1970, the reception rooms of the mansion were used for small parties, lectures, receptions and headquarters for the botanic program and garden groups. The former bedrooms and dressing rooms became an attractive art gallery. The entire mansion now is given over to art with the exception of a tea room operated in the dining and breakfast room areas and a gift shop adjacent to the foyer.

In 1970 after the raising and spending of \$750,000, the botanic program was moved into a home of its own, the new Botanic Hall, located downhill from the mansion. It is this attractive and adequate building that is

the site of countless flower shows including the camellia one. Adjacent to the building have been erected two orchid greenhouses and the Julia Bainbridge Memorial Camellia House. The latter was the first and was dedicated at the time of the 1972 camellia show. The Botanic Hall itself was dedicated at the 1971 camellia show.

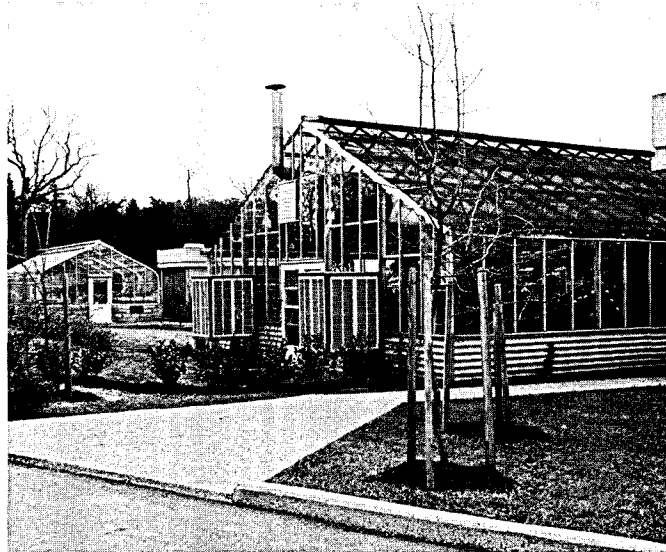
The Botanic Hall is now the center of all gardening activities and is headquarters for the Tennessee Federation of Garden Clubs and the Horticultural Society of Davidson County. On entering the building there is an atrium several feet lower than the floor and centered with a splashing bronze fountain surrounded with tropicals which are changed according to the season. The building includes offices, library, meeting rooms, a flower preparation room, kitchen, botanical laboratory and a very large display hall glassed on two sides giving a view of the beautiful Middle Tennessee hills.

The grounds at Cheekwood contain pools and fountains, formal gardens, nature trails, a wildflower garden, a Braille garden and numerous plantings which give joy at any time of the year. A Japanese garden is in the planning stage.

The current membership of the Cheekwood corporation is around



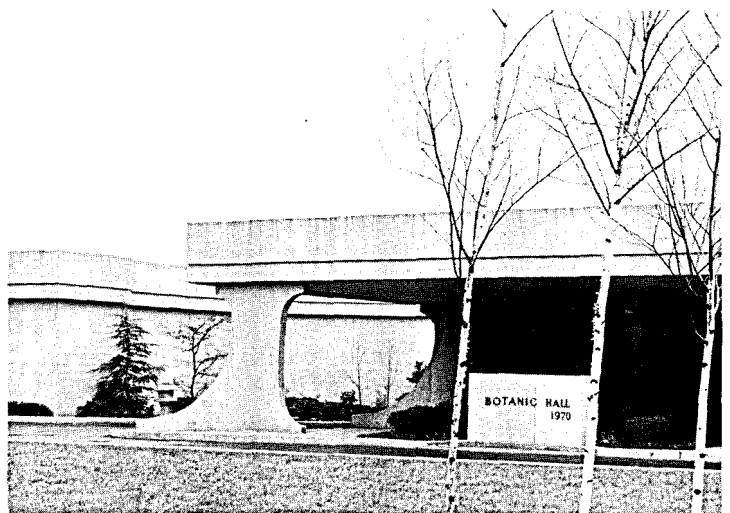
The Julia Bainbridge Memorial Camellia House at Cheekwood was dedicated in 1972 at the show of the Middle Tennessee Camellia Society. Members of the society contribute their time and work to its maintenance and well-being. (Photo by Randall Lantz.)



The camellia house adjacent to the Botanic Hall, the first built at Cheekwood, was joined later by two orchid houses with one seen at left. (Photo by Randall Lantz.)



Cheekwood Mansion in Nashville, Tenn. with its 60 rooms and 55 acres of rolling woodland given in 1960 by heirs of the Cheek family to a private corporation became the Tennessee Botanical Gardens and Fine Arts Center. The mansion now houses the fine arts department. (Photo courtesy The Nashville Banner.)



The Botanic Hall at Cheekwood erected 1970 is headquarters for a large scale botanic program and the setting for flower shows and related activities. (Photo by Randall Lantz, horticulturist at Cheekwood.)

5000. From this number, volunteer staff members, guides and even dirt gardeners assist the regular staff of director and horticulturists with the many and varied tasks incident to such an undertaking. A gate fee is charged nonmembers and scarcely a day passes that the gateman is not busy admitting large numbers of persons, particularly bus loads of children from the schools of Metropolitan Nashville and from neighboring towns.

A large part of the revenue for supporting Cheekwood comes from two events, the Swan Ball, a society function of early June, and the dis-

play of Christmas trees from around the world for two weeks in December sponsored by the Horticultural Society of Davidson County and staged by its member garden clubs.

There are many and varied programs and study courses for both adults and children held both day and evening. Lectures by visiting authorities on many subjects of botanical interest are well attended as are exhibits and demonstrations of all things botanical including art and needlework. A monthly publication "The Cheekwood Mirror" keeps the membership informed of forthcoming happenings of interest.



Centering the atrium in the foyer of the Botanic Hall is this cherubic bronze fountain set amidst a bower of tropical foliage. (Photo by Randall Lantz.)



The very large display room at the Botanic Hall, of which a portion is seen, is the setting for many exhibits, this one being needlework with a botanic motif. The display hall is the scene of the annual show of the Middle Tennessee Camellia Society. (Photo by Randall Lantz.)

STATEMENT REQUIRED BY ACT OF OCTOBER 23, 1962; Section 4369, Title 39, United States Code, SHOWING THE OWNERSHIP, MANAGEMENT AND CIRCULATION OF *The Camellia Journal* published four times a year at Fort Valley, Peach County, Georgia. (Date of filing: November 1, 1975.)

The names and addresses of the publisher, editor and managing editor are: Publisher, American Camellia Society, Box 212, Fort Valley, Ga.; Editor and Managing Editor, Milton H. Brown, Fort Valley, Georgia.

The owner is: American Camellia Society, Box 212, Fort Valley, Georgia. No individual owners or stockholders (A non-profit organization).

The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

The average number of copies of each issue of this publication sold or distributed through the mails or otherwise, during the 12 months preceding the date of filing (November 1, 1975) was 6000. Single issue nearest to filing date: November, 1975.

I certify that the statements made by me above are correct and complete.

MILTON H. BROWN
Editor

Cover Flower 'LASCA BEAUTY'

This beautiful hybrid resulted from a cross of *C. reticulata* 'CORNELIAN' x *C. japonica* 'MRS. D. W. DAVIS' made by Dr. Clifford Parks. It was named by the Los Angeles State & County Arboretum (LASCA); grown and introduced by David L. Feathers. Mr. Feathers has and owns the parent plant of this and 'DR. CLIFFORD PARKS'. He furnished the scions to nurseries with all the proceeds going to the Research Committee of the Northern California Camellia Society.

Century Club Donors

(Donors of \$100.00 or more)

Mrs. T. J. Stewart
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Special Gifts

Louisiana State Federation of China Painters: Contribution for use of Boehm film
Mr. Spencer C. Walden, Jr.
Mrs. Monique I. Peer
Mr. B. S. Jones: Books for library
Mr. and Mrs. William P. Simmons: Contribution in Honor and Appreciation of William P. Stevens and Mildred Taylor Stevens
Dr. and Mrs. Harry T. Moore, Jr.: Case and plaque for Australian trophy
Family of T. R. Crown, Sr.: Set of American Camellia Yearbooks
The following have made contributions for this special issue on hybrids:
Dr. Walter F. Homeyer, Jr.
The Northern California Camellia Society Research Committee
David L. Feathers
N. Terrell Weaver
Dr. Daniel E. Nathan
Milton H. Brown

Show Dates

Place, Location and Sponsor

Date

Washington, D. C., U. S. National Arboretum, Camellia Society of the Potomac Valley November 1-2, 1975
Savannah, Georgia, Men's Garden Club of Savannah November 1-2, 1975
Fresno, California, Smuggler's Inn, Central California Camellia Society— Early Gib Show November 8, 1975
Fort Valley, Georgia, Massee Lane, Middle Georgia Camellia Society .. November 8-9, 1975
Shreveport, Louisiana, Pierremont Mall on Line Avenue, Men's Camellia Club of Shreveport November 8-9, 1975
Valdosta, Georgia, The First State Bank, Valdosta Camellia Society .. November 15-16, 1975
Wilmington, N. C. Wilmington Hilton Hotel, Tidewater Camellia Society (In conjunction with ACS 26th Annual Fall Meeting) .. November 15-16, 1975
Charleston, S. C., First Federal Savings & Loan Association, 34 Broad Street, Coastal Carolina Camellia Society November 22-23, 1975
Gulfport, Mississippi, Gulfport Men's Camellia Society November 22-23, 1975
Natchez, Miss., Education Bldg., First Presbyterian Church, Natchez Camellia Club November 22-23, 1975
Alexandria, La., Alexandria Mall, Twin City Camellia Culture Club November 29-30, 1975
New Orleans, Louisiana, Whitney National Bank, Southern Camellia Society November 29-30, 1975
Albany, Georgia, The Garden Center, 808 Fifth Ave., Albany Men's Garden Club December 6-7, 1975
Brookhaven, Mississippi, Main Office of Brookhaven Bank & Trust Company, Brookhaven Camellia Society December 6-7, 1975
Jacksonville, Florida, Regency Square, Camellia Society of North Florida December 6-7, 1975
Port Arthur, Texas, Mingle Motor Company, Greater Port Arthur Camellia Society December 6-7, 1975
Arcadia, California, Lecture Room, Los Angeles State and County Arboretum, Southern California Camellia Council December 13-14, 1975
Houston, Texas, Memorial City Shopping Center Mall, Katy Freeway and Gessner Road, Houston Camellia Society December 13-14, 1975
Moss Point, Mississippi, Moss Point Men's Camellia Club December 13-14, 1975
Slidell, Louisiana, Municipal Auditorium, Ozone Camellia Club .. December 13-14, 1975
Conroe, Texas, Coushatta Camellia Society January 3-4, 1976
Panama City, Florida, Camellia Society of Panama City January 3-4, 1976
Baton Rouge, Louisiana, Baton Rouge Camellia Society January 10-11, 1976
Orlando, Florida, American Federal Savings & Loan Association Building, Downtown Orlando, Camellia Society of Central Florida .. January 10-11, 1976
Pensacola, Florida, Pensacola Men's Camellia Club, Inc. January 10-11, 1976
Ruston, Louisiana, Ruston Men's Camellia Society January 10-11, 1976
Beaufort, South Carolina, Council of Beaufort Garden Clubs January 17-18, 1976
Beaumont, Texas, Beaumont State Bank, Southeast Texas Camellia Society January 17-18, 1976
Tallahassee, Florida, Tallahassee Federal Savings & Loan Association, 440 North Monroe Street, Tallahassee Camellia Club .. January 17-18, 1976
Charleston, S. C., Northwoods Mall, Coastal Carolina Camellia Society January 24-25, 1976
Liberty, Texas, City Hall, Atascosito Camellia Club January 24-25, 1976
New Orleans, Louisiana, Camellia Club of New Orleans January 24-25, 1976
Augusta, Georgia, Augusta Garden Center, 598 Telfair Street, Augusta Camellia Society & Augusta Council of Garden Clubs, Inc. and in cooperation with the Georgia Railroad Bank & Trust January 31-February 1, 1976
Hattiesburg, Miss., Hattiesburg Camellia Society January 24-25, 1976
(Alternate date, if necessary is February 14-15, 1975)
Shreveport, Louisiana, State Exhibit Building on the state Fairgrounds, Men's Camellia Club of Shreveport January 31-February 1, 1976

Tuscaloosa, Alabama, Tuscaloosa Men's Camellia Club	January 31-February 1, 1976
Georgetown, South Carolina, Council of Garden Clubs	February 7-8, 1976
Jackson, Mississippi, Lobby of the First National Bank, Jackson Camellia Society	February 7-8, 1976
Savannah, Georgia, Men's Garden Club of Savannah	February 7-8, 1976
Thomasville, Ga., Garden Center, Thomasville Garden Clubs, Inc.	February 7-8, 1976
Tyler, Texas, Citizens First National Bank, Tyler Camellia Club	February 8, 1976
Columbia, S. C., Bankers Trust Co., Corner Gervais and Sumter Sts., Mid-Carolina Camellia Society and Bankers Trust	February 14-15, 1975
Birmingham, Alabama, Municipal Auditorium, Birmingham Men's Camellia Society	February 14-15, 1976
Monroe, Louisiana, Northeast La. Camellia Club	February 14-15, 1976
Redwood City, California, Veterans Memorial Building, Peninsula Camellia Society	February 14-15, 1976
Fayetteville, North Carolina, Fayetteville Camellia Club	February 14-15, 1976
Fort Worth, Texas, Lobby, First National Bank, Fort Worth Camellia Society, Inc.	February 15, 1976
Atlanta, Georgia, Phipps Plaza, North Ga. Camellia Society, Atlanta Camellia Society & Buckhead Lions Club	February 21-22, 1976
Memphis, Tenn., Goldsmiths Civic Garden Center, 750 Cherry Road, Memphis Camellia Society	February 21-22, 1976
Wilmington, N. C., Blockade Runner Hotel, Wrightsville Beach, Tidewater Camellia Club	February 21-22, 1976
Dallas, Texas, Dallas Camellia Society	February 22, 1976
Charlotte, North Carolina, Men's Camellia Club of Charlotte	February 28-29, 1976
Chattanooga, Tennessee, Chattanooga Camellia Club	February 28-29, 1976
Whiteville, North Carolina, Waccamaw Academy, Whiteville Camellia Society	February 28-29, 1976
Nashville, Tennessee, Middle Tennessee Camellia Society	March 6-7, 1976
(In conjunction with ACS 31st Annual Meeting)	
Fresno, California, Fresno City College Cafeteria, Central California Camellia Society	March 7, 1976
Santa Rosa, California, Sonoma County Camellia Society	March 27-28, 1976
Washington, D. C., U. S. National Arboretum, Camellia Society of the Potomac Valley	April 17-18, 1976
Baltimore, Maryland, Cylburn Wildflower Preserve & Garden Center, 4915 Green Spring Avenue, Pioneer Camellia Society	April 18, 1976
Washington, D. C., U. S. National Arboretum, Camellia Society of the Potomac Valley	October 30-31, 1976
Gulfport, Mississippi, Gulfport Men's Camellia Society	November 20-21, 1976
(In conjunction with ACS 27th Annual Fall Meeting)	
Fayetteville, North Carolina, Fayetteville Camellia Club	March 5-6, 1977
Modesto, California, Camellia Society of Modesto	March 19-20, 1977
(In conjunction with ACS 32nd Annual Meeting)	
Washington, D. C., U. S. National Arboretum, Camellia Society of the Potomac Valley	April 16-17, 1977

The American Camellia Society and The American Camellia Society Endowment Fund: What is Tax Deductible?

We have been in touch with the office that concerns itself with Tax Exempt Organizations at the Internal Revenue Service District Office, Atlanta, Georgia and have been told the following:

1. Dues paid for membership in the ACS are *not* (*repeat, "not"*) tax deductible as a member receives material in kind—the four issues of *The Camellia Journal* and the *Yearbook*.

2. Subscriptions for the *Journals* and the *Yearbook* for use in the offices, lobbies, and the likes of business and professional people—such as doctors, dentists, lawyers, etc.—are tax deductible as “ordinary and necessary business expenses.” This is covered in the code under Section 262.

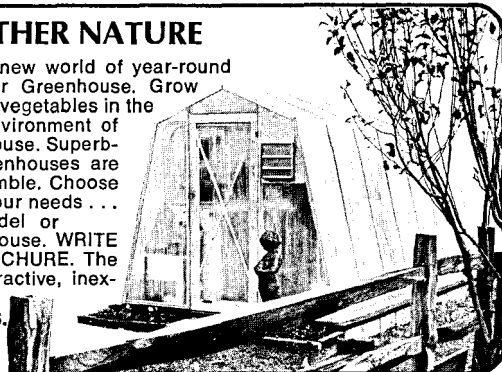
3. Contributions to the *American Camellia Society* are tax deductible under Section 501 (c) 3 since the ACS is listed in Publication 78 of the IRS.

The American Camellia Society Endowment Fund, whose purpose is charitable, educational, scientific, is covered under the code. The letter of determination that we have on file states, “Contributions made to you (i.e.; A. C. S. Endowment Fund) are deductible by *donors* as provided in Section 170 of the Code. *Bequests, legacies, devises, transfers or gifts* to or for your use are deductible for Federal estate and gift tax purposes under the provisions of Sections 2055, 2106 and 2522 of the Code.” This covers, as stated, regular contributions such as Century Club, Memorials, and other such contribution by a donor as well as income from bequests, wills, legacies, etc. as stated. (*Italics are ours.*)

If anyone wishes a copy of the letter of determination which is up-to-date, please write to us here at your Headquarters.

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A Friend of Mine

JAY BIRD

An English friend of ours admits to having a one-track mind, centered on camellias. He even named his bungalow "CAMELLIAS".

Just wait till you see 'JEAN PURSEL', a beautiful pink Retic Hybrid being introduced by Frank Pursel this year.

We continue to receive comments relative to the ill effects to new grafts caused by the use of gib on the scions parent plant, and by spraying plants with CYGON. Opinions vary, as everyone remains in the dark as to any exact chemical reactions that may be caused by either or both procedures.

Sasanquas seem to thrive in locations in the ground where the pH reading is under 4.6, and where the potash level is too low for Japonicas to prosper.

A friend advises that Retic varieties that will not grow well for him in containers will thrive when planted in the ground with a little extra dolomite.

Our nominee for "sad sack" of the year would have to be the fellow who received a large sack of scions neatly

boxed and sealed, and placed them in the refrigerator for three or four days prior to grafting. When he opened the box he found that the "scion sender", 2,000 miles away, had forgotten to tie the opening of the cellophane bag. The scions did not appear badly dried out so he grafted them. However, all leaves fell off, 8 or 10 of the scions within two weeks. The runnerup would have to be the cousin who secured and grafted 6 scions of an old variety that he particularly wanted for a special area. When they bloomed 2 years later all six were of a different variety he neither sought nor wanted.

The commercial product Calluset, will promote rapid healing, as well as callusing, of wounds on plants from pruning of limbs, etc.

THE MASTER SAYS: When in the camellia garden without your pruning shears is like one being up the well known creek without a paddle.

We need more contributions. New and interesting short topics as well as comments on published topics or items, will be appreciated. Forward to Jay W. Ellis, P. O. Box 888, Key-stone Heights, Florida 32656.



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Pre-Registration for Wilmington Fall Meeting Preferred

Convention Chairman Henry B. Rehder has advised us that Pre-Registration for the ACS Fall Meeting at Wilmington, N. C. for Nov. 13-15 is preferred. It will be a tremendous help in estimating numbers for banquet, busses, etc. The cost per person is only \$30.00 for the entire convention as outlined on page 35 of the August issue of *The Camellia Journal*. If you have not done so, please send your check in immediately to Henry B. Rehder, Box 3166, Wilmington, N. C. 28401.

—ACS—

Announcing Opening Of

Peach County Nursery

Specializing in Camellias and Camellia Maintenance

HUNDREDS OF VARIETIES — NEW AND OLD
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'BABETTE' Is A Real Cover Flower

'BABETTE' is a chance *C. japonica* seedling of Ferol and Sam Zerkowsky, Tammia Nursery, Slidell, Louisiana. It first bloomed in 1970. It is a lovely large white to blush pink formal double to rose form double, semi-double to peony or anemone. The five-pointed star shaped imbricated petals in the center distinguishes this flower. It blooms mid-season with long-lasting flowers that do not shatter. The plant is vigorous, compact and upright in growth with dark green leaves. It won the Seedling Award the first time it was shown.

To see this lovely flower, turn to the inside back cover and the advertisement on the facing page.

Membership Roster for 1975

The Governing Board of the ACS overwhelmingly voted to have a separate Membership Roster-1975 printed this year. This will permit the names to be printed larger than in *The American Camellia Yearbook, 1974-Vol. II* and at the same time permit a Yearbook for 1975 to have the approximately 250 pages of text and pictures. Were we to go back to larger print of the Membership Roster and include it in the 1975 Yearbook we would have been forced to have an issue with approximately 108 pages of roster and less than 200 pages of text.

We have checked with other national organizations and find that usually about *one-third or less* are really interested in the roster. Members of our own Society have complained about having to take the bulky Yearbook along on a trip in order to have the roster with them.

In order to accomplish this we have had to place a small charge on the Membership Roster-1975. The cost is \$1.00 postpaid to *members only*. The roster will not be sold separately or given to organizations, business firms, etc. Only members will have the list available to them. The roster will be published about the time of the Yearbook.

Many of you have already received your Dues for 1976 Statements and know that there is a block to check. You merely need to add \$1.00 to the amount of your dues—\$7.50 Single or \$12.00 Joint Membership.

The new roster will be small enough in size—about size of *The Carolina Camellias* or *The Camellia Review*—to carry in a man's side coat pocket, in a lady's pocketbook or in the glove compartment of the car. The size of the print will be that of Yearbooks prior to the 1974-Vol. II which was issued to members in December 1974.

Drop garden waste in—



Pat. Pend.

shovel rich compost out

The Rotocrop Accelerator. A remarkable new compost bin from England, scientifically designed to convert cut grass, leaves, prunings, even kitchen left-overs, into rich, natural food for your garden—in weeks.

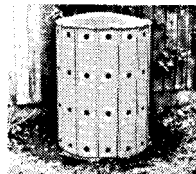
Set up the **Rotocrop Accelerator** in your garden. "Feed" it weekly with garden waste, and you'll have a never ending supply of free compost for a vibrant garden.

A SENSATION IN ENGLAND. Compost gardening is practically a way of life in England. English gardeners have acclaimed the Rotocrop Accelerator for its unique efficiency. Decomposition is fast because there are no corners to cool off. And the precisely calibrated air vents let just the right amount of air in without losing heat or moisture.

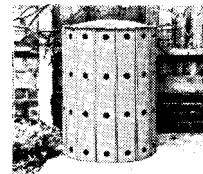
RUGGED, CONVENIENT. Tough PVC construction is long lasting and won't rot. Panels slide up individually or together, so you can shovel out from the bottom. An inflatable cover keeps heat in, rain out. And there are no unpleasant odors to attract bugs.

UNCONDITIONAL GUARANTEE. We'll ship in two weeks. If you're not fully satisfied within 14 days, return it and we will send you a refund. The money you save in artificial fertilizers or commercial compost will pay for your Accelerator in no time.

Accelerator 18 (above). 22 lbs. 3 ft. high x 34 in. diam. Holds nearly 19 cu. ft. Use on soil. **\$41.80.**



Accelerator 14. For smaller gardens. 3 ft. x 27 in. 11½ cu. ft. Use on soil. **\$36.80.**



Accelerator B. Use on paved surfaces. 3 ft. x 27 in. 11 cu. ft. **\$39.80.**

Color: All models natural green. Includes freight and handling east of the Mississippi. Packed flat for shipping.

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Please ship ☐ Accelerator 18 at \$41.80
☐ Accelerator 14 at \$36.80. ☐ Accelerator B at \$39.80 and your 18-page booklet on compost gardening. I enclose my check or M.O. for \$_____ (including \$3 for freight and handling West of the Mississippi). Residents of Pennsylvania add sales tax.

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BIRMINGHAM CAMELLIA SHOW

YOU ARE INVITED TO EXHIBIT IN AND ATTEND THE FINEST OF ALL
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Twenty-Fourth Annual Camellia Show

MUNICIPAL AUDITORIUM—BIRMINGHAM, ALABAMA

FEBRUARY 14th and 15th, 1976 — Admission Free

SATURDAY SHOW: 2:30 P. M. to 9:00 P. M.

SUNDAY SHOW: 1:00 P. M. to 6:00 P. M.

THIS BEAUTIFUL DISPLAY

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assisted by

THE MEN'S CAMELLIA CLUBS OF AUBURN AND TUSCALOOSA

in cooperation with

THE AMERICAN CAMELLIA SOCIETY

SHOW SCHEDULE OF SILVER TROPHIES AND AWARDS

1. Best Japonica Bloom in Show—GREEN CARD
2. Best very large Japonica Bloom in Show—GREEN CARD
3. Best large Japonica Bloom in Show—GREEN CARD
4. Best medium large Japonica Bloom in Show—GREEN CARD
5. Best medium Japonica Bloom in Show—PINK CARD
6. Best small Japonica Bloom in Show—GRAY CARD (mark card "SMALL")
7. Best miniature Japonica Bloom in Show—GRAY CARD
8. Best white Japonica Bloom in Show—GREEN CARD
9. Best 'Louise Hairston' Bloom, Solid or Variegated. Trophy donated by Mr. and Mrs. William Hairston—GREEN CARD
10. Best Reticulata Bloom in Show—GOLD CARD
11. Best Hybrid Bloom with Reticulata Parentage—WHITE CARD (mark card "WITH RETIC")
12. Best Hybrid Bloom with other Parentage—WHITE CARD
13. Best 3 Japonica Blooms, same variety—GREEN CARD
14. Best 5 Japonica Blooms, 2 or more varieties—GREEN CARD
15. Best 3 Reticulata Blooms, same variety—GOLD CARD
16. Best 3 Hybrid Blooms, same variety—WHITE CARD
17. Best Seedling—BLUE CARD—Mark card if Hybrid or Reticulata
18. Sweepstakes
19. Sweepstakes Runner-up
20. Silver Trophies or Tupperware to the 20 Blooms comprising the Court of Honor. Runner-up to each best Bloom award will be the first Honor Bloom for that category—other Honor Blooms by judges' vote.
21. Best Arrangement in Show will receive the same kind of Trophy as does the Best Japonica Bloom in Show. Best in other Arrangement Classes will receive the same kind of Silver Trophies as do the Honor Blooms.
22. Best Table Arrangement in Show will receive Silver Trophy. Best in other Table Arrangement Classes will receive the same kind of Silver Trophies as do the Honor Blooms and other Arrangement Classes.
23. American Camellia Society Certificates will be awarded where

SPECIAL NOTE: Due to the large amount of Silver Trophies and other awards, we ask each exhibitor to use correct color entry cards to assure proper placement and judging of your blooms.

BIRMINGHAM CAMELLIA SHOW

THIS IS AN OFFICIAL SCHEDULE FOR YOUR USE

Please direct requests for Bloom Entry Cards, specifying number of cards desired to:

G. W. CRAWFORD
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+ + +

RULES FOR HORTICULTURAL SECTION TWENTY-FOURTH ANNUAL CAMELLIA SHOW BIRMINGHAM, ALABAMA

1. No more than one Blue, one Red and one White ribbon shall be awarded to each variety.
2. Best Bloom in Show and Best Bloom in each other category will be selected from single entries ONLY.
3. Chemically treated blooms will be judged with untreated blooms and outside blooms.
4. Plants from which flowers are exhibited must have been owned by and in possession of entrant not later than January 1, 1976.
5. Wiring blooms to wood from parent plant is not only permissible but desirable.
6. More than one bloom to a single stem will disqualify the entry.
7. If only one bloom of a variety is entered, it shall constitute a class, and it will be judged against the standard of perfection for the variety, and awarded a Blue, Red or White ribbon, or no ribbon at all, at the discretion of the judges.
8. Judges may refuse to award a prize in a given variety and class if they deem the entries to be below show quality.
9. There will be no limit of blooms of any variety, and the exhibitor may win Blue, Red or White on the same variety if so chosen by the judges.
10. Blooms in competition for awards or prizes may be exhibited by amateurs only. The word "amateurs" is not to be rigidly construed, but sensibly and reasonably, to the end that those who, as of the date of the Show, earn their livelihood in whole or in part, from the business of dealing in Camellias commercially, shall be prohibited from exhibiting blooms for awards and prizes.
11. Classification and Entry Committee is authorized to reject entries of poor quality.
12. Flowers shall be placed alphabetically so that both the exhibitors and the public may find any flower with ease.
13. Flowers will be received from 7:00 A.M. until 11:00 A.M., Saturday, February 14th, 1976.
14. Judging will begin promptly at 11:30 A.M.
15. Exhibitors are not limited to members of any Society.
16. All persons except specified Show Committees must be off the floor by 11:15 A.M.
17. The Show Chairman shall have the authority to destroy all or any of the entries at the conclusion of the show, this by reason of the danger of flower petal blight.
18. The decisions of the Judges on Bloom Awards are final and are not subject to revision by the Show Committee or any other person or committee.
19. The Show Committee reserves the right to interpret the Rules and make further rules for the proper conduct of the Show.
20. First, second and third place ribbons will be awarded in all classes if warranted. Awards or ribbons will be given to those blooms selected by the Judges for the Table of Honor.

+ + +

NOTE: New Show Headquarters: The Guest House Motor Inn, a Master Host, 951 So. 18th St. Hospitality hours and Banquet will be at this location also. When you make reservations and when you register advise Reception Desk you are with the Camellia Show. There is a special rate.

+ + +

IT WILL BE "NICE TO HAVE YOU IN BIRMINGHAM"

Horticulturally Speaking

(Prepared by the Horticulture Committee)

Now that autumn is almost gone and winter about to set in, the camellia belt will witness many divergencies in cultural practices.

From North Carolina northeastward, frequent freezes and thaws are promised. That 1972 January day when the thermometer plummeted from 70° in the morning to 10° at night has not been forgotten. So precipitous a drop is unlikely from South Carolina to Texas; yet there will be balmy days and deep frosts and more balmy days. California will have the least ups and downs. Oregon and Washington will have fairly even weather, though the threat of freezing is ever present.

Though we sound like the most presumptuous weather forecaster, we realize that climate differs considerably even within the same state, just as the soil varies. While we may want to depict camellia care and culture

for each separate county, time and space protest. The most we can hope to do is generalize a bit and individualize here and there.

GIBBING

Gibbing of outdoor camellias is over till next August in the Mideast, but elsewhere it will continue outside as well as inside to prepare flowers for the shows, one or more of which will be held every weekend from now through March except for late December.

Visiting the shows makes this fun time for all gregarious growers if they have the necessary transportation. Yet work precedes the fun, because exhibiting flowers calls for selection of the cleanest and most nearly perfect blooms, followed by careful handling, packing and transporting so they will be delivered to the show committee in pristine condition, and because rising before sunrise to ac-

complish all this on time is usually required. *How to gib* has been fully recounted in *ACS Journals* and *Yearbooks*.

In this connection the greenhouse grower faces a tough problem in deciding how to bring his plants to the height of bloom at the date of the show where he is hungriest for top honors.

Gibbing every week or two for a couple of months before show time will help, but weather uncertainties remain the bugaboo. You have temperature control; you can raise and lower it, and you have humidity control. What can you do about sun, clouds, rain and snow? Well, you can blank out the sun by raising and lowering shades on the roof and the sides. You can try to overcome darkness with fluorescent lighting. Then, just when you think you have coordinated all manner of controls, an unpredictable weather change occurs or your electric current fails. It is then that you begin to wonder whether you may be able to exchange your greenhouse for a room in the nut house. Be calm; you'll be lucky next year.

Of course, when you arrive at the level of competing every Saturday during the season, the problem dissolves. It doesn't matter if a particular bloom misses a certain show; it will be ready for the honor table next weekend.

As high temperatures such as summer imposes are essential to flower bud formation, so low temperatures are essential to normal flower opening. Therefore, set the thermostat so that the heat does not come on until the temperature in the greenhouse drops below 40°. Don't let the camellias freeze; just let them think it's going to happen.

A Western North Carolinian says, "We usually have a few warm weeks

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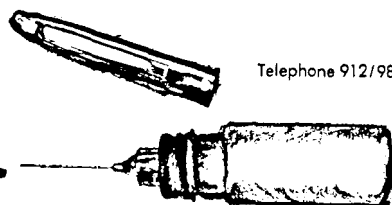
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| () 30cc Regular Squeeze Bottle | Air mail 52c extra | @ \$5.00 |
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in December, so the early gibbed buds will open prematurely unless we keep the greenhouse as cool as possible. By hanging a shade cloth over the roof and south end and providing maximum ventilation, we may succeed in holding those blooms back. Otherwise, they make beautiful Christmas party decorations. Friends all around will help use them!" He gibbs every week or two from late November to February, using 15,000 ppm, and likes to gib each bud twice, two weeks apart.

South Carolinians report that "the practice of treating outdoor buds from late December through early February produces larger blooms in late February and early March, though some may start to open before a killing frost; nevertheless, many will open in perfect condition between cold spells."

DISBUDDING

From Southeast to Southwest the practice of disbudding goes on and on for six or seven months; in Southern California from June through December, in South Carolina from August to February. While some varieties may set buds only during their first growth cycle, some set them late, even within a month of their natural blooming season. So, anyone interested in developing as large blooms as possible, whether for the show, the house or the corsage, must make trip after trip through his plantings, reducing the number of buds which will be allowed to open.

ACS Director-at-Large Tom Evans says, "As you progress through the season, be sure to maintain a balance of buds in different stages of development, ranging from small to large, so the period in which high quality blooms become available is lengthened." President Emeritus Clyde Copeland adds, "No matter how much it hurts, you'll still be happy about the results."

And Ernie Pieri likens disbudding to pruning, for it improves a plant's shape while it opens up the center for sunlight to penetrate.

Bill Mann of Shreveport, La., remarks, "Leave one bud to a terminal end, hopefully facing downward for best protection. Twist the buds off so as not to damage the bloom bud next to the one being removed, and leave buds of varying sizes so the flowers will not all open at the same time. Continue disbudding as excess buds appear. You might just ignore a bush near the street so people driving by can enjoy a mass of bloom!"

MULCHING

Mulching outdoor plants is universally practiced throughout the camellia belt. Anyone who hasn't yet spread a good organic mulch like pine needles or bark (readily available in the South) over the roots of each plant had better get busy and do it immediately. It should be two to four inches thick when pressed down, to retard the heating of the soil on warm days and the cooling-off process on cold nights, to discourage weeds, to promote retention of moisture, and to enrich the soil as it decomposes. Decomposition is slow in cold weather, so one might say "you get the most for your money when you renew your mulches in November."

As the winter weather grows bitter, some people pull the mulch slightly

away from the plant's trunk so as to enable the bark to dry out and forestall freezing and splitting of the wood.

Bill Mann has a friend in Shreveport with camellias growing in cans that remain outdoors the year round, who believes that the holes in the bottom of the cans need to be covered to keep air away from the roots inside the cans, so he mulches all around the cans to a depth of several inches. One dividend from this is a definitely bettered appearance. Another is a lowering of the need for watering.

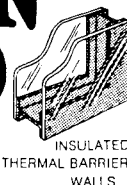
WATERING

Ways of providing sufficient moisture for greenhouse plants were thoroughly discussed in the August '75 *Journal*, so we will talk only about watering outdoor plants in containers and in the ground.

Although camellias require less water in winter than summer, the soil must not be allowed to dry out if satisfactory blooms are to be produced. In some parts of the country, nature provides adequate rainfall or snow in winter and the owner does not have to bother, but this is not universally true.

In the Mideast growers are becoming aware of the fact that watering cannot be wholly neglected in winter.

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Since drouth is not as noticeable in cold weather as in hot, the weather eye must not be shut; so, although care was taken to see that the ground held plenty of moisture before the onset of freezing weather, care must also be exercised to assure replenishment when the soil is drying out.

Wherever the soil is predominantly sandy, as it is in many parts of the Southeast, the rains drain quickly away, leaving the top layer quite dry within three or four days. Depending on the atmospheric humidity, the in-

tensity of the sun, and the volume of humus contained in the soil immediately around camellia roots, supplemental watering should be applied every fourth or fifth day after a soaking rain.

One hears debate about the effectiveness of a method employed in some areas of the South to protect buds from light frosts and freezes whereby plants are sprayed with a fine mist while the temperature is dropping below 32°. This forms a film of ice which thermally insulates

the plant against the nighttime lows. It is not recommended by people in the sand hills and Piedmont sections who say that the ice concentrates the heat from a bright sun the next morning and scorches the encased buds and leaves. They prefer to put up burlap covered frameworks and install 100-watt electric bulbs over the camellia plants whose buds are swollen or partially open and later, in compliance with ACS regulations, exhibit the flowers as "Grown Under Protection."

In container culture, it is a good idea to observe the plants every two or three days and water when—and only when—the topsoil becomes dry, since over-watering may prove more fatal than under-watering. Where container-grown camellias are mulched with fir bark, pine needles or straw, they may need water less often even in warm, dry, windy locations. However, the mulch should be pulled back in order to gauge the moisture or dryness. A regular schedule for checking this condition proves useful, inasmuch as time tends to slip by unnoticed.

PESTS AND DISEASES

Before winter is over, in some parts of the country, the indoor and the outdoor flowering seasons will have ended. Then is the time to use an oil spray to rid the plants of red spiders and aphids. Isotox and Malathion will eliminate most insects except scale. A solution of three tablespoons of Oil-i-Cide to a gallon of water can be used to wipe the leaves clean of scale. Dy-Syston spray will rid plants in the ground outdoors of scale, but should not be used where it may contact pets as it is poisonous.

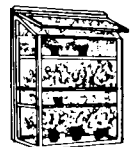
All fallen petals must be gathered up and destroyed to prevent the spread of petal blight.

GRAFTING

In many parts of the South, grafting can be started in late February and March. Instructions can be found in the 1972 ACS Yearbook at page 109, and the *Journal* of January, 1975, pp. 10-13.



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FERTILIZING

Here is one subject on which there are more diverse opinions than there are on religion, politics and economics—fertilizing. The Horticulture committee ventures to suggest that you seek advice from the best available authorities, try out their methods, then settle down with the formula (maybe of your own devising) which best suits your particular circumstances.

Let us tell you what some of the experts say, first with regard to *outdoor camellias* in wintertime.

In Mid-Carolina, the sand hills region, withhold fertilizer until the bloom is over, then in late March apply a good grade of camellia-azalea fertilizer with trace elements, in accordance with manufacturer's instructions.

From Central Mississippi comes the word that as winter sets in a light feeding is in order: half a cup of a mixture of 2 parts cottonseed meal and 1 part nationally advertised camellia-azalea fertilizer. This is recommended for a plant about 4 feet tall; the amount should vary according to the type of soil and the growth habits of the camellia. And don't forget that some varieties cannot tolerate much fertilizer. Like 'ELEGANS SUPREME' and 'TIFFANY', they will shed leaves at the sight of a fertilizer bag, so cut the dose in half for them.

It seems that in Northwestern Louisiana everybody has his own idea about feeding, according to Bill Mann, who reports as follows:

"My next-door neighbor keeps his camellias healthy by spraying the foliage monthly all year with a liquid camellia-azalea fertilizer, to which he adds some malathion when needed. Ed Akins uses a dry camellia-azalea fertilizer once a month, but he also adds a handful of cottonseed meal to each foot of height for those planted in the ground. Once a year he gives them a dose of minor elements.

"Will Worley uses a mixture of one-half camellia-azalea fertilizer and one-half cottonseed meal in March,

April and May, then four times a year he feeds cottonseed meal to each plant at the rate of a handful to each foot of growth.

"Ab Abendroth's outdoor blooms have greenhouse size and quality and most are 5 feet or taller. He foliage feeds with Rapid-Gro in March at the rate of 1 pound to 45 gallons of water, a one-year graft getting about a gallon of liquid. In January and at quarterly intervals he applies cottonseed meal, complementing the April dosage with wood ashes for potash. Every month from June through January he foliage feeds Carl Pool Br-61 at the rate of 1 pound to 30 gallons of water. And to maintain the proper soil pH he applies Dolomitic limestone as needed."

Ernest Pieri reports that most Southern Californians believe in two feeding programs, one solid and one liquid. The dry food program begins now with cottonseed meal to intensify the color of the soon-to-come flowers. When the blooms are gone, one person will apply equal parts of blood meal and cottonseed meal and another will use a prepared camellia food put out by Bandini or the Kellogg Fertilizer companies. The

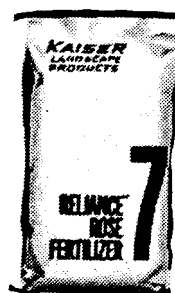
third and last application, made in June, consists of one-third blood meal and two-thirds cottonseed meal to induce continued new growth.

The liquid food program is a monthly application of commercial fertilizer at from 30 to 50% of the manufacturer's recommended solution. When the time comes to spur new growth a high nitrogen fertilizer such as Mor-Life, a 15-5-5 type, is used. The nitrogen proportion is gradually reduced to 2-10-10 and on down to 0-10-10 (such as High Bloom) as the flowering season comes on. At this final stage an iron chelate solution is introduced to further enhance the color of bloom and leaf.

Jack Mandarich recommends applications in November and February of 3 parts cottonseed meal and 1 part hoof-and-horn meal for Northern California.

With regard to *fertilizing in the greenhouse*, where conditions are more or less similar throughout the camellia belt, one might not expect as many different formulas as are used on outdoor plants; nevertheless there are many kinds. See *Journal*, August, 1975.

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Hybrids—They Are Not!!

MILTON H. BROWN

We have been informed that 'PAT SUMMER' is actually the McCaskill hybrid 203 which is now carried in *Nomenclature 1974* as 'CREATION'. This is not so! 'PAT SUMMER' is a Massee Lane chance seedling of *C. japonica* originated by the late Maxwell R. Murray who was associated with David C. Strother and Massee Lane for decades.

The confusion apparently comes from the very similar foliage—very small leaves at the terminals and small leaves elsewhere. The similarity stops there. 'CREATION' is described as "luminous soft Pink, Large, semi-double to anemone form." 'PAT SUMMER' which is ACS Registry Number 1359 is a peony, 'DEBUTANTE'—form and is dark red; some blooms have had as many as 34 petals and 130 petaloids. Both plants should, in our view, be excellent subjects for bonsai.

The other controversy has not been so easy to "solve". In the Atlantic

Coast and Gulf Coast sections for a number of years a variety has been known as 'CHERRY BLOSSOM'. It has found its way into shows as a *C. japonica*; and it has also won awards as being a hybrid; one person says he feels it is a *C. sasanqua* that "doesn't know when to bloom." We have now been put on the right track by the excellent and authoritative *Gendai Tsubaki Meikan* (translated as "Present-Day Camellias in Japan") which ACS has recently obtained as a generous gift by Mr. Eikichi Satomi of Japan. This book, published in March 1975, is a nomenclature book *plus*. It covers some 744 varieties—which includes 36 original species; each entry has a photograph of the flower and a complete description of it, with only three varieties on each page.

On page 125 we spotted the picture and description of what we know and have seen as 'CHERRY BLOSSOM'. We have had it translated by Mrs. T. B. Bryson of nearby Warner Robins, Ga. and have had correspondence with Mr. Satomi. The correct name of this variety is 'SAKURABA-TSUBAKI' (translated "Cherry-Leaf Camellia") and is not the one described on page 133 of *Camellia Nomenclature-1974*.

The true 'SAKURABA-TSUBAKI', which has been grown and erroneously shown as 'CHERRY BLOSSOM', originated during the Edo Period of Japan—this period runs from 1615-1867. Mr. Satomi also describes it as an old variety but not much propagated due to its slow growth. The flower has usually ten petals—so must be described as semi-double and flat form. The color is a pale—virtually white—shade of pink on which there are a few pale-red *shibori* ("tie-dyed") markings. Mr. Satomi also adds that the plant sometimes bears pure pink sports. Our plant at Massee Lane bears both types of bloom. Mr. Satomi

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also said unequivocally that this flower belongs to *C. japonica*; Professor E. G. Waterhouse on page 12 in the book *The Magic of Camellias* says that the Japanese name for *C. japonica* is *tsubaki*; therefore, it is our view that 'SAKURABA-TSUBAKI' is indeed "Cherry-Leaf Camellia Japonica."

The description of the bloom, the serrated cherry-like leaves and the description of the plant growth habit and our personal observations here at Massee Lane is definitive proof in our view that the camellia 'SAKURABA-TSUBAKI', over 100-year old Japanese variety, is what growers in this country have been calling 'CHERRY BLOSSOM'. We have called this correction in nomenclature to William E. Woodroof and his nomenclature committee in the hope the change can be made in the 1976 edition of *Camellia Nomenclature*. We also recommend that those growers and propagators who have this lovely flower give it its proper name. We further recommend that local show chairmen accept the variety only with its "proper" name and as a *C. japonica* and not as a hybrid. (We will include slides of this in many of our slide sets if and when requested by local clubs for their programs.)

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One institution salutes another.

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From the Desk of the Executive Secretary/Editor

By the time you have gotten to here you are fully aware of what a truly outstanding issue of *The Camellia Journal* this is. You will have read all of the up-to-date material on hybrids and hybridization in this reference edition which was the handiwork of "The Number One Hybridizer from Number One Camellia Lane." We all owe "Dave" Feathers a deep debt of gratitude for giving up much of his summer in getting authors to furnish him the materials for his keen editing of the articles and the great manner in which he sent the articles in for publication. We also want to thank all of the authors for their excellent response; the generous contributions financially by Dr. Homeyer, Terrell Weaver, the Northern California Camellia Society's Research Committee, Dr. Daniel Nathan and

your Editor. We thank our advertisers who have helped in such a grand manner in presenting this great issue. We also want to share our gratitude with Lauretta Feathers, "Dave's" wife, who "tolerated" his spending so much time to present to the camellia world a permanent textual, reference document "Hybrids—Camellias of the Future."

This Special Issue on Hybrids and the Special Issue on Greenhouses are available in single copy or in multiple numbers at only \$1.50 each postpaid. Send your check to the ACS, P. O. Box 212, Fort Valley, Ga. 31030.

In the February 1976 issue we will resume our sections on Local Affairs and Notes and International Notes. We have sent our first periodic memorandum to all of the local, state and regional clubs that are members of

the ACS. We shall continue to do this from time to time, in the hopes those organizations will find something therein to assist them in their programming and putting on their shows and displays. Send in any useful ideas to us for incorporation in these memoranda or in the Local Affairs and Notes section.

We have also had to sacrifice other regular sections such as In Memoriam, Memorial Donations, Century Club Members, Special Gifts. These will all show in the February issue dating back to our August publication date. We apologize for this omission.

We hope you all will have an outstanding camellia season; and Ann and I look forward to seeing many of you "along the camellia trail".

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