The Camellia Bulletin

Volume 17, Number 4 August, 1964

C sasanqua CHARMER

(Courtesy McCaskill Gardens, Pasadena)

Published by

NORTHERN CALIFORNIA CAMELLIA SOCIETY, INC.

COMMENTS ON CAMELLIA BREEDING

*Dr. Clifford R. Parks

No professional in horticulture or plant breeding, particularly where woody ornamentals are concerned, underestimates the contribution of the amateur breeder to varietal development; and further, none underestimates the volume of labor these hobbyist breeders contribute to their work. In many cases, however, shortcuts could be taken without hampering the quality of the product. This article has been prepared to point out a few breeding shortcuts, as well as to remind amateurs that their potential contribution to the improvement of the camellia is to be encouraged. This same point can be made for the breeder of any woody ornamental crop.

Through observation and discussion with amateur breeders, it is my belief that much too much time is often spent in making controlled pollinations. A controlled pollination is one in which both the female (seed) and the male (pollen) parents are known by virtue of the fact that the pollination is carried out by man. This might be contrasted with an open pollination (OP), where the female or seed parent is known but the male (pollen) parent is unknown. In this latter case pollination is carried out by insects, other agents or even such things as gardeners accidentally brushing from one flower to the next.

For that matter, some would argue—why make controlled pollinations at all? And for some purposes OP's are quite useful and even adequate. For instance, if we are looking for a variety resistant to a particular characteristic, and we have very few clues as to what a "good cross" would be, it is most efficient to screen a large population of open-pollinated seedlings through selecting for the characteristic under consideration. The point is that when one is breeding for a particular objective, it might be more efficient to start from a large number of open-pollinated seed rather than from fewer cross-pollinated seed. It is desirable to first clearly understand if cross-pollination is necessary at all. It is not necessarily "unscientific" to base phases of a breeding program on open-pollinated progenies. In fact, OP's are often used in the breeding program in progress here.

On the other hand we often have some information on the characteristics of the seedling progeny of a given variety. In the cases where we have this information about the breeding behavior of a variety, we likely will make more progress by selecting our parent varieties and hybridizing them. Often this information comes from open-pollinated progenies which have been grown to flowering for other purposes. We may even deliberately grow out OP progenies before proceeding to develop a hybridization program. To summarize, when we have very little or no information regarding the breeding behavior of our varieties, then we can obtain some very general—but very valuable—information by growing OP seedlings; from the information gained from OP seedling groups, we can then predict which cross-pollinations would best move us toward our horticultural goals.

The first problem to be considered regarding controlled pollinations is the choice of parents. Two factors must be considered in this choice — horticultural desirability and fertility. Many varieties which make good pollen parents are totally unacceptable as seed parents. Any variety which produces nearly any amount of pollen can be used as a male parent and this would include many forms of double and semi-double flowers, since even formal flowers occasionally produce a few anthers with viable pollen; on the other hand, it has been our experience that if a plant will not set open-pollinated seed, then likely it will not set seed from cross-pollination. As I have pointed out before, it is not enough to choose a variety known to be a good seed setter; it is also advis-

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able to pick individual seed parent plants which are known to set seed well. Often plants of the same variety set seed in quantity in one location, but set none nearby. At Descanso Gardens in La Canada, for example, considerable shade and increased humidity seem to enhance seed set.

In addition to climatic factors which affect seed set, varieties with single or semi-double flowers can be expected to regularly set seed and serve as satisfactory seed parents.

Of course, there are exceptions to this. A few, quite double Camellias regularly set some seed; and almost any variety will rarely set a capsule or two. But the chance of a controlled pollination setting on a variety that regularly does *not* set OP seed is slight; and only in cases where it is obvious that a cross with such a plant would be valuable, should time be spent making such "long-shot" crosses. So in the choice of parents for breeding, we must carefully consider the limitations of the cross we plan.

Good seed setters possessing the characteristics we desire are at a premium. Often times one has to accept a seed parent that is horticulturally second best, since the horticulturally superior plant is simply too female-sterile. There are cases where the potential hybrid is so interesting that the cross is extensively tried, even though the breeder is not optimistic that the cross can be carried out. Such a potential cross is Kunming *C. reticulata* x *C. lutchuensis*. I am yet uncertain whether any of those that tried this cross last winter were successful.

We need to also consider which part of the blooming season is optimum for seed set. Based on data collected from crosses made in February, March and early April at Descanso Gardens in the Los Angeles area in 1963, it appears that seed set was approximately equal throughout this three-month period. It should be pointed out that many different types of crosses are being compared as a basis for this generalization and in any case this conclusion has little meaning for different climates. More extensive data from the 1963-1964 crosses will be compiled as available and compared with the spring 1963 results. (It is hoped that this material will be available in time to appear in this year's *American Camellia Yearbook*.) Until this information is available it appears that February, March and early April are about equally good times to make crosses, at least at Descanso Gardens.

Now we come to the actual process of the pollination. Basically, this consists of three steps: removing the pollen-bearing parts from the flower to be used (emasculation), applying the desired pollen to the stigma and then protecting the pollinated bud from pollen contamination by bees and the like. The basic rule in emasculation is to keep damage to the bud to a reasonable minimum. While efficiency must be considered, it is particularly important not to loosen the bud. I find that the bud can be kept in place with the thumb and index finger of one hand, while the castration is carried out with a sharp instrument manipulated by the other hand. I prefer a sharp-pointed surgical scissors. Dr. A. E. Longley used a single-edge razor blade—it is a matter of personal preference. The upper one-third to one-half of the flower bud is removed (sepals, petals and ALL anthers), while the pistil is left untouched by the process—this latter point is most important. With a little practice, an emasculation can be done in a few snips and should only take a fraction of a minute.

The actual process of pollination is even simpler. Except for the case of stored pollen (which can be done most easily from a small gelatin capsule), I select a fresh-opening flower just shedding pollen for the pollen source. The pollen can be rubbed directly from the anther onto the stigmas of the receptive flower. It is important to use male flowers that have not been long open and thus are free of bee contamination. One male flower, depending on the amount of pollen it has, can be used to pollinate from a few to hundreds of stigmas. There is, as all know, a great volume of lore about proper pollination technique. There is much talk about camels-hair brushes, vials for pollen and the like. Some people have even designed pollination kits. One cactus breeder developed a technique which required a living cat's tail (attached to the cat) to transfer

(Continued on Page 13)

CAMELLIA SASANQUA IN THE LANDSCAPE

J. Carroll Reiners, Sacramento, California

Don't underrate Sasanqua as a camellia that "tried but couldn't." You may condemn it because you see it as another camellia riding on the coat-tail of the highly popular *C. japonica* or because it does not have the large-size flowers of other popular exhibition types. If you have exhausted all possibilities to exploit its usefulness and still do not like it, then I shall say that you tried and that all of us are privileged to enjoy our preferences. Now, if you have not given consideration to its virtues, follow me and let's see if we can find some reasons to justify growing *C. sasanqua.*

I believe that all will agree that the perfect camellia has not yet been introduced. Our favorites of any camellia species are probably the best of the lot, but the best can have faults and do have them. The most complete and thorough rating system by the American Camellia Society places *C. japonica* GUILIO NUCCIO at the top with a 92.1% score. No other camellia rated as high as 90%. So we begin our discussion with the known fact that no camellia is 100% perfect. And this also applies to *C. sasanqua.*

C. sasanqua may be rather loosely compared to the Floribunda Rose in that it is usually a very prolific producer of small flowers. Most of the species' cultivars create a massed bloom effect which, during a good season, can be a striking accent. The bloom is in late fall and very early winter preceding the main bloom of *C. japonica.* The foliage is generally small compared to *C. japonica* and *C. reticulata.* The growing habits are quite diversified, varying from extremely rapid onward to very slow, willowy, sprawling, erect, prostrate, compact, dwarf, etc. The flowers are short lived and usually not classified as of exhibition type. Summarized, we see obvious possibilities for usefulness of the sasanqua species:

1. Earliest camellia to bloom;
2. Mass flowering (most varieties)
3. Smaller foliage;
4. Very diversified growth habits.

These characteristics set Sasanqua apart from other species and establish this race in the category of special uses, since its flowers are not prized for cutting or display as are Japonicas and Reticulatas. The primary use of a *C. sasanqua* is for the many functions of a landscape plant, rather than as a subject for the camellia collector who specializes in fine show specimen flowers. For landscape use one can select any form of Sasanqua to fit the particular situation where a definite plant form is needed. I shall classify a few, by growth habits.

UPRIGHT GROWTH, growing taller than its width

CHOJI GURUMA — Rose-pink with petaloids, anemone form, fairly free flowering, early. Upright, open, fast growing.

HANA JIMAN — Deep rose-pink, very large semi-double, free flowering.

HUGH EVANS — Single pink, profuse flowering. Good foliage, vigorous, upright and rather compact. Good in sun.

JEAN MAY — Large, shell pink, double. Glossy foliage, compact, upright. Good landscape.

KO-GYOKU (Little Gem) — White edged pink, small, full double formal. Very upright, rigid, very compact, slow growing.

NARUMI-GATA—Single, white shaded pink, very large. Upright narrow, compact.

PAPAVER — Soft pink, bell shaped, single, large 3½" flowers, fairly free flowering. Definite narrow upright and slender, vigorous.

SETSUGEKKA — Large, single to semi-double ruffled white with pink edges, very free flowering. Medium growing, vigorous upright, densely foliaged.

SHINING STAR — Single, white, heavy blooming. Strong upright growth. Background.

SNOWFLAKE — White, flat, large petaled single. Best of single white, very free flowering. Large, deep green leaves, very narrow, upright and compact.

BUSHY GROWING, usually about as tall as broad

BRILLIANCY — Bright cherry red, large, single with cluster of stamens.

Densely foliaged, very compact growth, old plant 5′ high, flowers shatter.

BROOKSIE ANDERSON — Small, soft pink double, profuse, extremely bushy with dark green foliage.

CHARMER — Single white, large, edged salmon-pink, free flowering, upright spreading growth, open and vigorous.

COLLEEN — Single pink, good substance, masses of bloom, early. Excellent heat resistance, sun. Bushy spreading, medium growing.

DAWN (Vernalis) — White flushed pink, free flowering. Medium growing, upright and spreading.

FLORIBUNDA — White edged lavender, single. Good low dense leaved plant.

FRILLED WHITE — White, large semi-double, frilled, like SETSUGEKKA, very free flowering. Slow, compact, low branched, spreading, medium size.

FUKUZUTSUMI — White shading to rose at tips, free flowering, exceedingly fragrant, large semi-double. Medium growing, fairly upright.

GIN-NO-SAE — Small, creamy white, full anemone, free blooming. Spreading upright.

HINODE-GUMO — Large single white, edged pink, fluted petals. Very free flowering. Deep green leaves, upright bushy growth, vigorous.

HINODE-NO-UMI — Deep crimson, large single, flat form, profuse. Vigorous, upright, compact.

HIRYU (Vernalis) — Not recommended for landscape use.

MINE-NO-YUKI — White, large double, free flowering. Densely foliaged, almost prostrate, wider than tall, prune for dwarfing.

MOMOZONO NISHIKI — Single pale pink, semi-double, fairly free flowering, vigorous upright.

OCEAN SPRINGS — Large, single, white edged with crimson, free flowering. Vigorous, bushy grower, upright open growth.

ROSEA — Single, rose-pink, large, free flowering. Large bush, upright spreading, medium growing. Good in sun.

SHICHI-FUKUJIN — Very large, soft pink, single to semi-double free flowering. Vigorous large bush with deep green foliage, tall, upright arching open growth.

TANYA — Deep rose-pink, single, free flowering. Small leaved, densely foliaged, compact, dwarf spreading bushy habit. One of the finest for artistic training, Bonsai, etc.

WILLOWLEAF — White margined pink, single, shy on flowers. Outstanding foliage, compact, dwarf. Old plants 3′ high and 5′ wide.

YAE-ARAKE — White edged pink, large single, twisted petals, free flowering. Upright, open spreading.

SPRAWLING, branches tend to spread outward

APPLE BLOSSOM — White blushed pink, single, early. Vigorous, spreading, open growth, medium growth.

AUTUMN SNOW — White single, solid mass of bloom. Open growing, free flowering, early, ground cover if pruned.

BRIAR ROSE — Soft clear pink, single. Vigorous open upright.

CANDY REITER — Ruffled soft pink, single, free blooming, densely foliaged, fine trailing habit.

CHRISTMAS CANDLES (Hiemalis) — Bright red semi-double, massed along with ascending branches. Nice growth habit. A SHISHIGASHIRA seedling.

CLEOPATRA — Rose-pink, semi-double to peony. Spreading, very dense foliage, old plants 3-4 feet tall, 5 feet wide. One of the best. May be dwarfed by pruning.

CRIMSON BRIDE — Dark crimson, single, free flowering. Dwarf open growth, very droopy, sprawls.

LAVENDER QUEEN — Lavender-pink, large, single, fairly free flowering. Vigorous, loose spreading upright arching.

MOON MOTH — White, large single. Dark glossy foliage, densely foliaged, spreading, slow growing. Free flowering.

PALE MOONLIGHT — Large, lavender-pink, semi-double, irregular with rabbit ears, long lasting, fairly free flowering. Dainty small leaves, semi-spreading pendulous habit. Baskets and groundcover.

PINK SNOW — Light pink anemone. Vigorous, low spreading slender growth.

(Continued on Page 20)

HYBRIDS

(An interview with Julius Nuccio by Roy Thompson)

"The japonicas are finished," was a remark frequently heard a dozen or so years ago when the camellia public saw its first reticulata blooms. Today, when I recalled this remark to Mr. Julius Nuccio, the well known camellia nurseryman of Altadena, he laughed. "Yes, Roy, I said it, and you said it, but today the retics are strictly for the camellia specialists; the general public is increasing its purchases of japonicas, but not of retics." He added that sasanquas are well liked because of their early bloom, and hybrids, especially DONATION, because of their generally fresh green appearance the year round and the delicacy of their bloom.

There are about forty hybrid varieties now on the market, he said, and a few added each year. The English, who originated them, value them chiefly for mass plantings, where they fit in so well with other shrubs on the edges of wide lawns, and for hedges. But here in Southern California we use them mostly as individual plants, or, at best, in small groups. Nuccio noted an exception to this, however, for he recently sold 78 *Setsugekkas* to be planted as a hedge *(a Sasanqua—Ed.)*

The Nuccios are engaged in a breeding program (after the manner of rose breeders) to discover which varieties make the best parents. They have discovered that sasanqua "blood," when introduced into hybrids, produces earlier blooms; another valuable sasanqua feature is that they can stand over-watering better than others. Julius remarked, "we are only laying the foundation; we are gathering the material which the next generation can make use of, for the business of plant breeding is a slow one."

One of Nuccio's objectives is to produce hybrid varieties whose blooms will remain on the plant for five days; another is to produce a greater range of colors. At present, he said, there is too much magenta in their coloring. The JURY hybrids from Australia have already achieved a much better texture.

One important value of hybrids, he said, is that they are easy to grow. Japonicas, sasanquas, and hybrids will grow well if given a fair chance, but this cannot be said of reticulatas. The latter tend to be more finicky and it would seem that each retic plant has its own peculiar needs. This is one of the reasons they should be handled by specialists.

"Can you name a hybrid variety which is definitely outstanding?" I asked.

"Yes; it is E. G. WATERHOUSE. A glance at this one reveals its high quality; its texture and color are outstanding, for it has the transparent clarity and shine not found in any japonica. If you put a dozen pink formal camellias (including japonicas) on a table and add a bloom of E. G. WATERHOUSE, the latter will immediately steal the show. Also, this variety has the longest lasting flowers of any hybrid."

"Can hybrids stand more sun than japonicas?"

"No, but the smaller leaved ones are more compact and better able to protect themselves from over-exposure to sun."

"Is DONATION still the most popular?"

"Yes, decidedly so. To most people this variety represents the hybrid type. Kramer's Nursery sold 800 of these last season."

"What are the chief drawbacks of hybrids?"

"Shattering and lack of substance. But breeders like Jury are improving the substance. As for shattering, there's plenty of that among the japonicas."

"Are there any hybrids whose flowers fall off in one piece?"

"FLIRTATION comes closest to this."

"What promising new varieties are, or soon will be released?"

"HOWARD ASPER, a deep rose color with large flowers will be available this fall. FRANCIE L, a cross between APPLE BLOSSOM (saluenensis) and BUDDHA. The flower gets to 5½ inches and is like BUDDHA. We bought this from a man who made just one cross in his life—and this is it. He said he wasn't particularly interested in camellias. Then there is DOROTHY JAMES. This is a formal, a beauty, and has had a limited release in Northern California."

A JAPANESE CAMELLIA GARDEN

(as described by Dr. Robert K. Cutter, of Berkeley, Calif. in a letter written while on a 'round-the-world tour in May, 1964. — Ed.)

"To talk about our most interesting experience so far, it was in Tokyo. I had written on to the Japanese Tourist Bureau advising them of my interest in camellias and asking if they could get me in touch with someone who could show me one or two outstanding camellia gardens in Japan. I received a letter back that a Mr. Ishikawa would be glad to show me around and another letter from Mr. Ishikawa advising that he would be glad to meet me at the Airport; however, I wrote him that that would not be at all necessary since we were in a large group and would arrive rather late at night, but I thanked him profusely and asked him to lunch at the hotel with us on a certain date. I told him that Mrs. Cutter and I would like very much to see his garden, about which he was very modest, and any other he thought might interest us. So, when the day came I made arrangements to hire a car and a driver and when he came to meet us he passed out his card and only then did I find out that our guide was to be Mr. Ishikawa, President of the Nippon Submarine & Cable Company! So, after lunch we went out and on the way out I met the man who had arranged for the car for me and he told me that the car was ready. Mr. Ishikawa overheard him and said in Japanese evidently something to the effect that this would not be necessary, so I paid off the car I had hired and when we got out there he had a very new Mercedes Benz, with his driver, who was the best driver we had seen in Tokyo. He said he had been with him for fourteen years. He then told me that he was going to take me to Mr. Adachi's garden. I didn't dare hope that it would be the Mr. Adachi whose book I had recently bought for $25.00, and I believe it is the finest book I have in my library. It illustrates many of the varieties of camellias in Japan, but furthermore, has a large section on flower arrangement. Mr. Adachi is the foremost teacher of flower arrangement in Japan.

"When we arrived there Mr. Adachi himself met us in a kimono and with great friendliness, but very dignified. He had quite a large garden of camellias, most of them planted in the ground and as he went through the garden he would cut a camellia — with a stem from two to six inches long — and hand it to Virginia. About the second flower he handed to Virginia she said "Bob, smell this." It was without a doubt the most fragrant Japonica I had ever put my nose to. I thought that maybe it was just a freak and was something which that one single blossom had, and as there were quite a number on the ground I got down on my knees and started to smell one by one and even the fallen blossoms were exquisitely fragrant.

It was worth my whole trip to Japan, because I think I have in my garden a fragrant Japonica, if not the most fragrant in the United States, and this was just about twice as fragrant as mine — not with the musty fragrance of the Sasanqua, but with a beautiful fragrance.

As most of you know who will be receiving these letters I have been working toward fragrance for some time and only this year have managed to get a *Camellia lutchuensis,* which is a very small, poor blossom but which also has an exquisite fragrance.

I have four seeds set on the Japonica and I can hardly wait to get home to make sure that they have not fallen off and that they are swelling and maturing — but what I could do with a big plant of this camellia from Mr. Adachi!

In any event, Mr. Ishikawa and Mr. Adachi got a tremendous kick out of the thrill that this was obviously giving me. Mr. Adachi speaks no English but Mr. Ishikawa speaks very good English. Mr. Adachi said something to Mr. Ishikawa and they laughed and Mr. Ishikawa translated that Mr. Adachi had said that that was a very old plant and he had never known before that the flowers had such fragrance."

CAMELLIA DESIGN

Roy T. Thompson, Glendale, California

Flowers consist of an organization of lines, spaces between the lines and color, but the arrangement of lines, or pattern, is the most important. It is also more complex and more able to arouse aesthetic feeling and stimulate mental activity. The initial impact of a flower upon human perception is probably from its color; the impact from form, or the arrangement of lines, comes later and keeps coming, perhaps with more and more clarity and force the longer one looks at the flower. There seems to be no end to the suggestions made by patterns.

Art critics point out that patterns stir up endless activity in the subconscious mind, which is itself a storehouse of accumulated human experience covering long eras of human existence. The total effect of any given pattern derives from the associations that have been established over the centuries for that pattern. In other words, the lines stated by an artist in any form of art are meaningful in just that measure in which they derive from the accumulations of truth which lie deep in us and which are closest to what we call the universal.

So, in looking at a vase, an arm, a face, or a flower, the subconscious mind compares what the eye reports with its own secret, or racial, knowledge. All this goes on automatically without our knowing, or caring what is happening, or how. This is as it should be; only philosophers delve into such things. Nevertheless it sometimes adds a great deal to our understanding of a given aesthetic experience if we know something about the functions of the pattern, or, if you wish, the design, of a flower.

Design, in this modern era, has become extremely important. Almost everything we see daily has been, or is being, re-designed, not only for utilitarian ends, but for beauty. Patterns are extremely important and we take beauty for granted. Plant breeders have successfully changed many flower patterns.

Every line, curve, or angle in the flower as a whole, or in its respective parts, causes its own subconscious response. Some patterns are more potent than others, but each has its own individual power. This doesn't mean that flower patterns are necessarily precise and definite; rather they are *suggestive* and being suggestive they have the power to set in motion unpredictable activity in the mind. In other words, patterns open innumerable doors to imaginative activity, and, when combined with color, their power to charm and delight is illimitable.

All this sounds very academic and far removed from camellias, but it has certain practical applications. Take the camellia variety MARTHA BRICE. A good many camellia people have complained that it lacks something; it has been called "dumpy," and "bob-tailed." Its pattern is incomplete, cut off in the wrong places the eye is led to expect something that isn't there. Too bad, since the flower has such a lovely pink color. Another example is the full opened MATHOTIANA; nothing could be more lovely than the shapely bud-center as long as it holds; but when it opens fully, as it does in Southern California, it no longer gives the eye satisfaction.

The formal double camellia has a language all its own. A hundred years ago formals were called "Perfections" and were thought to be the only camellia type worth having because of their precise regularity. Each petal is (except in size) exactly like its neighbors and they form a complete and perfect circle, and since a circle always comes back on itself, the observer's eye tends to repeat the circuit. This pattern stands for order, symmetry, regularity, balance; and for established, fixed, known factors, with nothing mysterious about it and no questions asked. This exaggerated emphasis on form, regardless of color, has long since been abandoned, but it does reveal how important form can become. We still like formals but many of our formal varieties are much looser than the old perfections.

The single camellia has, in the last two decades, steadily gained in importance; its pattern is simple — a few petals encircling

(Continued on Page 19)

NOTES ON A RETICULATA BREEDING PROGRAM

T. Durrant, Tirau, New Zealand

It is far too early to report on a reticulata breeding programme that was started about five years ago, but a request from one Camellia Editor to another cannot be ignored. What follows is an outline of the plan, with a brief progress report to date.

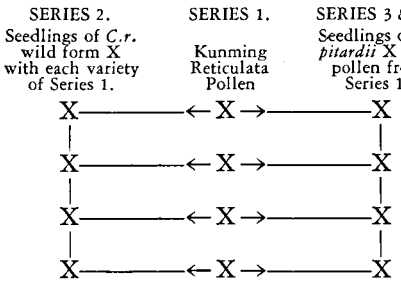
* * *

A plant of the Wild Form *C. reticulata,* obtained from Great Britain ten or eleven years ago, shows astonishing vigour and is now a very shapely bush about 12 feet high, and as many feet across. Each year, in early August, it is smothered with large numbers of cherry pink, single flowers, and sets a lot of seed. It also grows quite easily from cuttings. While some of our Kunming reticulatas have made fine plants, none have shown the burgeoning vigour displayed by the wild form and some have characteristic spindly growth, detracting considerably from their garden merit. Most of them, too, are plagued by virus which, in some cases, has resulted in the loss of the plant. Chlorotic leaves burn in the summer sun and fall, the general reticulata picture being not too happy.

Since the wild form sets seed very freely, the idea was born to try and breed seedling vigour back into the reticulatas, at the same time losing the virus. Flowers of the Kunmings are quite magnificent enough and improvement must be sought in vigour, habit of growth, hardiness to weather and ease of propagation.

The suggestion has been made, backed apparently by some cytological evidence, that the Kunmings are, in fact, hybrids of *C. reticulata* and *C. pitardii* — in one or other of its forms. Under the assumption that this suggestion is correct, the following programme was planned and undertaken:

STAGE 1: Under controlled conditions, flowers of *C. reticulata,* wild form would be pollinated from all the pollen bearing varieties of the Kunming reticulatas, the resulting seedlings grown on to flowering and then selected for habit of growth, vigour, flower form and colour. Under similar conditions, seedlings would be raised from *C. pitardii* and selected. We would then have three parallel lines of related plants, as shown diagramatically below:



etc.

This stage of the programme is complicated by the fact that we appear to have three forms of *C. pitardii* of which two set seed. The Pitardii series is therefore being duplicated as 3 & 3a.

STAGE 2. The selected seedlings in Series 2, 3 & 3a will be pollinated from the same representative of Series 1 as was used to produce the individual seedling concerned. Selected progeny from this stage will give us Series 4, 5 & 5a.

STAGE 3. This will involve crossing both ways between Series 4 and Series 5, 5a. Also, both ways between Series 2 and Series 3, 3a. We shall make the most rigid selection among the available seedlings for the plants to be used as parents in this stage and hope that, among the resulting progeny, will be some plants with the desirable characteristics set out above.

Progress Report

There is no clear cut period in time for each of these stages, which already overlap. Series 2 consists already of some 100 plants of varying ages. The older ones are now flowering and ten have, so far, been selected for Stage 2 and allotted serial numbers as MR/S2/1, *et seq.* The pollen parents of those selected to date are CRIMSON ROBE, SHOT SILK, CHANG'S TEMPLE, WILLOW WAND and BUTTERFLY WINGS. The selected plants are all vigorous to a degree, have sturdy growth and are setting flower buds very freely. Those from SHOT SILK show the erect habit of their male parent.

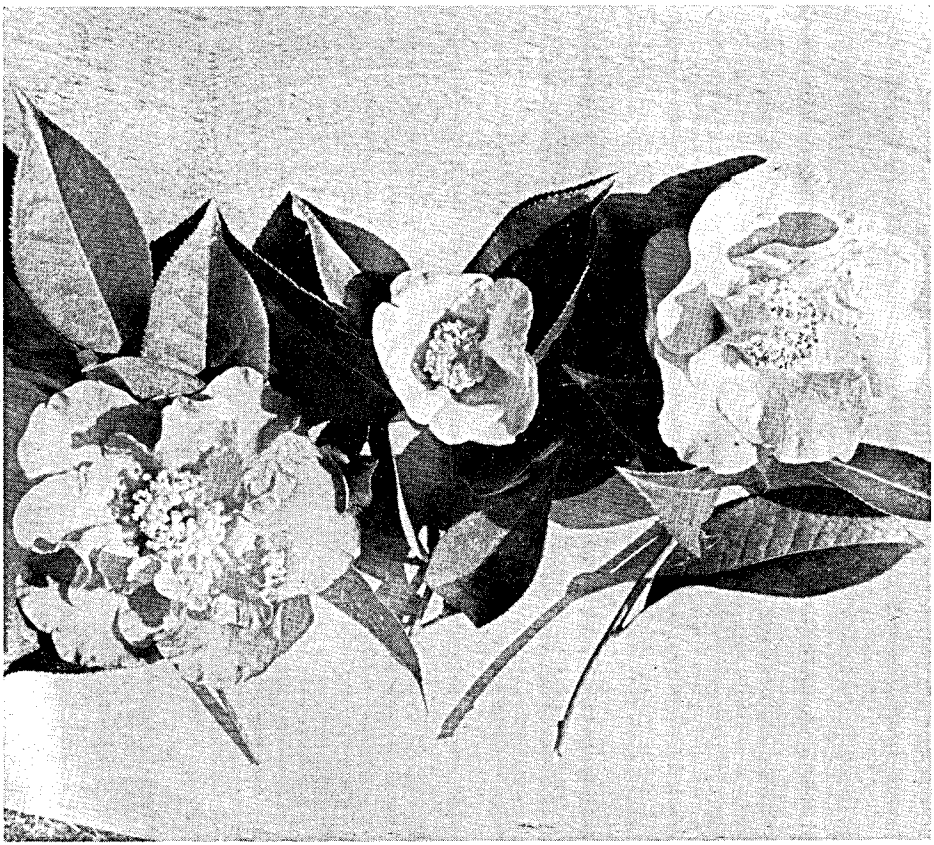
As would be expected, flowers have lost some size though several reach 6 inches when fully expanded. Flower form is usually open, semi double, with 10 to 15 petals which are waved and creped in excellent style. Colour ranges from soft pink to bright red with one a deep China rose. This last is from SHOT SILK pollen and has just flowered for the second time. It has some considerable garden merit and has produced 15 seedlings for Series 4.

Reticulata seed capsules are frequently very large and sometimes contain as many as 16 or more viable seeds. Numbers of plants concerned in the programme would rapidly become astronomical, therefore rigid selection will be practised to keep the number of seed parents being used within reasonable bounds.

Since CRIMSON ROBE, SHOT SILK, BUDDHA and BUTTERFLY WINGS have set seed from hand pollination, we are growing seedlings which have both their parents within Series 1. We call these a side line, as they don't appear in the programme. Four seed capsules of BUDDHA this year produced no less than 45 seedlings!

The illustration shows, in the centre, a flower of the original *C. reticulata,* Wild Form, used as the seed parent for Series 2; on the left a bright red, 5½-inch bloom; and on the right a soft pink, with heavily waved inner petals. Both are from CRIMSON ROBE pollen.

Trying to improve the reticulatas may be setting ourselves a hopeless task. Just in case the bees really have all the answers, we have a few seedlings from chance pollinated blooms of the Kunmings and, if a winner turns up among them, the bees can have all the credit!



MORE ON GIBBERELIN

As reported by Mrs. J. C. (Helen) Reiners

Dr. Roy Sachs, professor at the Univer sity of California at Davis, recently spoke to a group of enthusiastic camellia growers in Sacramento. He discussed early maturation of ornamental plants, including the use of chemical as well as mechanical means to bring about alteration in blooming time of the plant in question.

Since the use of gibberelic acid is of timely interest, let us note here that Dr. Sachs stated "in the long run you lose out by using gibb on your camellias." It has been found that overuse of this acid inhibits growth bud development some time after you have applied it to your flower buds. An initial effect — producing larger and earlier flowers — is followed by retarded growth bud development, and in some cases it has been recorded that the new growth, more often than not, will be without blooms the year or two following liberal use of the acid. Records for longer than two years ago are very sparse.

It has been argued that since growth buds (terminals) have a natural supply of gibberelic acid present at the site, application of more acid to this area is acceptable. We would agree that if an oversupply did not prove to be harmful, a grower might feel free to use gibb extravagantly.

The use of the acid is considered by those responsible for controlled scientific tests to be yet in the research stage. As could be expected, camellias do not all respond in the same manner. Dr. Sachs could give no figures which apply to specific cultivars. Lists of those camellias which show increase in flower size or appreciable change in bloom date have appeared in recent camellia bulletins and reviews.

Dr. Sachs said that the carrier for the acid should be selected with care. Certain substances foreign to natural plant growth will stunt or kill the tip growth if applied there exclusively, as is usually done with gibb. He suggested the use of a small amount of Dreft (synthetic detergent), as being the *least* toxic, when only the spreader is being questioned.

BOOK REVIEW

THE CAMELLIA TREASURY, by Mrs. Paul Kincaid. *Hearthside Press, Inc.,* 118 East 28th St., New York 16, N. Y. $9.95. 218 pages, 104 illustrations, including 16 four-color plates.

This magnificently illustrated, beautifully done book (approx. 7″ x 9″) is somewhat unique in its treatment of all phases of camellia culture and usage, in that the major emphasis is upon the more artistic aspects of the camellia hobby, primarily flower arrangement. This is understandable because of the author's position as an outstanding exponent and teacher of flower arrangement, particularly of the Japanese schools, but all of the practical aspects of camellia culture are dealt with extensively and well. The many excellent illustrations, largely by this versatile author, fully demonstrate her outstanding photographic ability, as well.

The format and legibility of the book are superb and reflect further credit upon all responsible for it. While this publication is a "must" for the flower arranger, its clear and concise treatment of such cultural matters as planting, care, landscape use, pest control, propagation, greenhouse and outdoor culture, hybridizing and "what not to do," as well as recommended lists of varieties for different climates are of great practical value. Special chapters are devoted to advice on Camellia Show exhibiting and to special effects usage, such as bonzai and espalier-ing.

The only criticism we would have has to do with a number of errors in the spelling of camellia varietal names, but this is of minor importance. All in all, the author, with the helpful assistance of a considerable number of specialists in their field, has done an outstanding job and is to be highly commended, both as an artist and as an authority in the "plain dirt gardener" field.

COMMENTS ON CAMELLIA BREEDING (Continued from Page 4)

the pollen. This is mostly nonsense, since carrying the desired pollen in the "male" flower is faster and probably offers less chance of contamination. (I apologize for removing the breeder's art.) I suggest that it is a good habit to label (carefully and completely) the cross at the time of pollination. Plastic twist-lock labels are fast, cheap and quite dependable.

Once pollination has been carried out, it is important to cover the bud to prevent pollen contamination by bees and other insects. There has been much said as to whether or not one should cover crosses, and if so — what is best to cover them with. It is likely that once the stigmas are heavily covered with pollen from the same species in an artificial cross-pollination, more pollen added later by an insect will not contaminate the cross. Where the artificial pollination is with a species different from the species of the seed parent, it is quite possible that pollen from the seed-parent species could very easily contaminate the cross. In any case, there is very little information or data from controlled experiments regarding this problem of contamination after crossing. Since bee activity in our camellia gardens is quite apparent and since bees have been observed to visit emasculated buds, I think it is a good practice to cover all crosses after pollination. Covering pollinations does not seem to seriously hinder seed set, and at least in some instances, covering the pollinated buds may increase the chance of seed set. Brown-paper grocery sacks (6¾"x3½") are inexpensive, easy to use and surprisingly resistant to wind and rain. These sacks can be easily held in place by 1 and 5/16 inch long paper clips. I think that the paper sacks should be left over the cross until the flower would normally wither, which (to be on the safe side) indicates a period of from ten days to two weeks. In one test we found (1964, *American Camellia Yearbook,* Camellia Breeding Progress Report, page 163 and following) that camellia stigmas are receptive over a long period, thus contamination could occur over a long period. This spring a test was carried out by Dr. Robert Cutter and myself to determine whether plastic, brown-paper or waxpaper sacks were superior covering materials. If possible, the results of this test will appear in this year's *American Camellia Yearbook.* Whatever covering device may eventually prove best, it should only require a few seconds to perform. It should be possible to complete all the steps in making a pollination in five minutes, and with practice one should be able to make a cross in two minutes.

The choice of the buds for pollination presents some selective decisions. I found in some preliminary tests (1964, *American Camellia Yearbook,* Camellia Breeding Progress Report, page 163 and following) that the size of the bud is not too critical, since tight buds showing considerable color were as effective in crosses as loose buds one day away from opening; however, large buds are easier to work with. The placement of the bud on the plant is not too critical, but it appears (not without exception) that neither little buds buried at the bottom of the bush nor large buds on vigorous shoots are likely to set seed.

How many crosses should be made as to a certain objective? There is no formula for answering this question. If the cross is difficult, then one must make more pollinations. For example, in the effort to cross *C. sasanqua* and *C. japonica* this past season, over 1000 pollinations were made; but in an effort to recombine the cold-hardy characteristics of the two *C. japonica* varieties BERENICE BODDY and DONCKELAARI I expect to average one or more seed per pollination, thus — far fewer pollinations of this latter cross were made. Most actual crosses desired fall between these two examples in terms of difficulty of obtaining seed. One has to judge from personal experience and that of others as to how many crosses are required to get a seed. To determine how many seeds of a given cross the breeder wants, the number for which growing facilities are available must be balanced against the number required to show reasonable sampling in the recombination of inheritable traits.

It is my opinion that amateurs will contribute much in the future to the breeding of the camellia and other woody ornamen-

(Continued on Page 19)

TEA — "THE QUEEN OF THE CAMELLIAS"

By Mrs. M. J. (Lilette) Witman, Macon, Ga.

During the long summer months, while leisure often turns to boredom, a good book becomes an invaluable companion. I believe that most admirers of the camellia would enjoy "The Book of Tea," written by the eminent Japanese author and oriental art expert Okakura Kakuzo. This short book, only 133 pages long, although published in 1906, offers timely reading at a period of our history when our country is so deeply involved in the affairs of Asia.

Okakura traveled through China and India in search of learning and the great knowledge he acquired on the art of the Orient won him so much fame in his own land that, at the age of twenty-nine he was appointed to the post of principal of the National Art School. While in India he became the friend of Rabindranath Tagore, the great Hindu poet and prose writer in whom he found a kindred soul for both men were worshippers of the true and the humble.

Early in 1900 Okakura was sent to the United States to dispose of some rare pieces of Oriental Art. Shortly after his arrival over here he wrote The Book of Tea. He read it to a select group of Boston art lovers at Fenway Court, often described as a "Venetian palace," built in the heart of the city by Mrs. Isabella Gardner to house her already famous art collection. Thanks to Okakura, Mrs. Gardner added some treasures from the Far East to the rare paintings and *objets d'art* which she had acquired during her travels through Italy. Works of other artists can also be seen at Fenway Court which is open to the public on certain days, among these works a much admired portrait of Mrs. Gardner painted by John Singer Sargent.

The unusual talents and remarkable knowledge of Okakura were soon discovered in the Western World. Mrs. Isabella Gardner, then "Queen of Boston," exerted her great influence in art circles to have him named Curator of the Boston Museum Oriental Art Department, an eminent post which he retained until his death in 1913. It is thanks to him and to his rare purchases while curator, that the collection of Chinese paintings of the Boston Museum is unequalled in the Western World.

Okakura soon became a sort of link between the cultures of two hemispheres, and in The Book of Tea he evaluates cleverly these hemispheres main differences in an attempt to bring better understanding of Asiatic thinking and way of life. This book, although originally written in English, was soon translated in many languages including the author's native tongue. During his stay in the West, Okakura remained "a man of two worlds" as his book reveals. In this exotic and fascinating story of Teaism and of the Tea Ceremony—the latter being the apotheosis of what he calls the "Queen of the Camellias"—the author inserts some acerb remarks about the unfounded criticisms of the Westerners on Oriental civilizations, criticisms which he says can only be based on ignorance and prejudice: "We Asiatics are often appalled by the curious web of facts and fancies which has been woven concerning us. We are pictured as living on the perfume of the lotus . . . Indian spirituality has been derided as ignorance, Chinese sobriety as stupidity . . ." He then adds with sarcasm that Asia returns the compliment:—"We used to think you the most impractical people on the earth for you were said to preach what you never practised. . . . Unfortunately the Western attitude is unfavorable to the understanding of the East. The Christian missionary goes to impart but not to receive." He continues by saying that although we have scoffed at oriental customs we have readily adopted the habit of drinking the "brown beverage," afternoon tea having become an important function in Western society. Ships of the Dutch East India Co. brought the first tea to Europe, the author says. It became known in France in 1636, in Russia in 1638, and was welcomed in England in 1650. The celebrated English coffee-houses were soon re-named tea-houses.

In the words of Okakura "tea has not the arrogance of wine, the self-consciousness of coffee, the simpering innocence of cocoa." To the Orientals tea is a work of art and a master's hand is required in order "to bring forth its noblest qualities."

It has often been called "the froth of liquid jade." Teaism, the philosophy of Tea, is not merely the worship of beauty, Okakura tells us, but it also expresses our appreciation of man and nature. It is based on cleanliness and humility and shows us the way of restoring our sense of proportion to the universe and of finding comfort in simplicity. It has entered noble boudoirs as well as the home of the humble. "The outsider may indeed wonder at this seeming much ado about nothing. What a tempest in a tea cup, he will say . . . Those who can not feel the littleness of great things in themselves are apt to overlook the greatness of little things in others."

The "tea ceremony" started in Japan in the fifteenth century, the Zen buddhist sect being responsible for its rituals. The ascetic Zen monks gathered in tea houses and, in front of the image of the founder of their sect, the revered Bodhi Darma, they drank tea with solemnity out of a single bowl. Soon the ceremony developed into the worship of the beautiful, of purity, refinement and meditation. The tea house became "an oasis in the dreary waste of existence." During the tea ceremony there is "not a colour to disturb the tone of the room, not a sound to mar the rhythm of things, not a gesture to obtrude the harmony." The tea house (Sukiya) has always been noted for its extreme soberness and simplicity. Since it is not intended for posterity it is built of ephemeral material such as bamboo. Its size is to be "four mats and a half," that is to say ten feet square. The room is bare except for a central alcove containing an altar (Tokonoma) on which a valued painting or a sober flower arrangement is placed and frequently renewed, repetition being carefully avoided for fear of monotony. The guests approach the sanctuary noiselessly, then bend low in order to creep into the room through a small door not exceeding three feet in height, the richly endowed as well as the poor, this to impart humility. They bow in front of the altar before taking their seats. The host enters the last. Only the melody of the boiling water in the iron kettle breaks the silence of the place while contributing to its enchantment. The room may be faded and the tea equipment may be old but all is immaculately clean.

Okakura concludes his dissertation on tea by telling the reader that it uplifts the spirit and frees it from vulgarity, that it imparts to it serenity and peace while providing a sanctuary for relaxation, against the offending ugliness and nerve-wracking din of modern industrialisation. "The heaven of modern humanity is indeed shattered in the Cyclopean struggle for wealth and power. The world is groping in the shadow of egotism and vulgarity. . . . Meanwhile let us have a sip of tea . . . the soughing of the pines is heard in our kettle. Let us dream of evanescence and linger in the beautiful foolishness of things."

We may not be tea drinkers yet we can not refrain from being proud that one of the least conspicuous members of the Camellia genus possess much magic properties in its leaves. Indeed *C. Sinensis* (tea) has proven to be one of the most valuable plants in the world for it has played, and is still playing, a vital role in the economy of the Orient. When we think of the native habitat of the tea plant China and Japan invariably come to our mind. Still perhaps one of the finest forms of the species, *C. Sinensis Var. Assamica,* is indigenous to India. As its name indicates it is found in many parts of Assam. It is characterized by large leaves and by plants that develop into large trees.

An article in the New York Times of April 20, 1964 reveals that the island of Ceylon, at the southern tip of India, "lives on tea," tea being responsible for more than a quarter of the government revenues. This article introduces to us Kenneth J. Ratwatte, reputedly the best tea planter on the island. Mr. Ratwatte has 880 acres of tea plants on this 1900 acre plantation. In Ceylon the air is said to be "soft and fresh but never cold," and the gentle slopes of the island, kept pleasantly green by clear streams, are said to be ideal for tea culture. The climate must be mild indeed Mr. Ratwatte being able to grow orchids, anthuriums, hibiscus, orange and mango trees, side by side with his tea plants. The exportation of tea earns two thirds of the island's foreign exchange—about 240 million dollars a year.

In The Book of Tea, Okakura mentions the legend which says that as far back in

the ages as the year 879, the main source of revenue in Canton, China, was the duties on salt and tea. When we remember that oil is extracted from the "Tsubaki" seeds, and that this oil has so many uses in the Orient, we realize what varied roles the camellia has played and is still playing on the world stage, and that it is not merely the ornament which we, in the West, worship.

Okakura's little book has been an inspiration to me as it has been no doubt to many others. Now when I sip the golden liquid I think more kindly, with greater understanding and appreciation, of the way of life of millions of people in the Orient and of their fascinating rituals. And so we can say that a humble camellia plant, through its remarkable virtues, has in a small way brought closer the people of East and West. Judging by recent articles, written in our camellia reviews by Japanese men, the resurgence of interest in those camellia species that produce magnificent blossoms, is receiving warm applause in the Orient. This too, we hope, will help strengthen the spiritual bond between our two continents.

OVER THE BACK FENCE

By the Editor

NEW CAMELLIA SOCIETY

The Delta Camellia Society, with headquarters in Antioch, California, has been organized this summer, with Dr. John D. Lawson as President and his wife, Nora Lawson, as Secretary, having a starting membership of 20. This promises to be a live organization under the guidance of these very well-known camellia growers and enthusiasts and plans are already being made for a first Annual Camellia Show to be held in Antioch early next year. Meetings will commence in October and will be held at the Antioch School Administration Building. A very imposing list of speakers has been arranged for. Affiliation with the American Camellia Society has been secured and it is hoped that reciprocal arrangements of benefit to both societies may be worked out with the Northern California Camellia Society.

DEER TROUBLE?

Several of our larger camellia growers in the Lafayette area have been plagued for some time by the depredations of deer upon their gardens and, in consequence, we have long been searching for a suitable repellant. These beautiful, but troublesome animals have greatly increased in numbers of late, due not only to their sheltered situation in the hills adjacent to our gardens but also because of the destruction of hundreds of acres of their natural habitat, trees and brush, in the hills beyond us in the course of construction of a major dam and recreation area. Our nearby woods offer protection and our gardens, bird baths and pools afford a handy means of food and refreshment. As many as a half-dozen deer at one time have been counted in broad daylight, but primarily they feed at night. Damage to roses has been particularly heavy, but azaleas and the new growth on camellias are nipped rather severely at times.

In an effort to combat this, almost every prescribed repellant has been tried,, some of the chemical preparations being almost prohibitively expensive. While an electrified fence, has been reported effective, we have had little luck until recently, when we hit upon the idea of trying liquid ammonia in dispensers. The little open cans were placed around the rose-bed and refreshed every second or third evening for a period of about one month, only an ounce or so to each can. After getting a good sniff of this two or three times, the deer have not entered our rose garden for about two months, although we have discontinued using the ammonia for about that length of time. Even though purchased in laundry-size bottles, this is a very inexpensive material and, by the gallon, would be downright cheap. A chemist has suggested that we try ammonia crystals, which would eliminate the necessity of containers and could be placed right on the ground, acting as a fertilizer when it decomposes. We intend to try this, not only for deer, but to combat our pesky moles and gophers. If it works, it would be a god-send!

AMERICAN CAMELLIA SOCIETY SHOW RULE POLICIES

Milo E. Rowell, Fresno, California

The introduction of gibberellic acid in cultural practices has caused considerable controversy among the more sophisticated camellia exhibitors. Some fanciers, in articles in camellia literature and many more in discussion, have criticized American Camellia Society, either because it has not ruled out exhibiting any camellia treated with any chemical (except fertilizer!) or on the other hand has not required competition between flowers so treated and not treated. This situation has seemed to make it desirable to attempt to clarify the position and function of American Camellia Society in its show rule-making capacity.

Perhaps a brief oversimplified review of the variety and scope of camellia societies would be appropriate to a discussion of this subject. We have local independent societies, some formalized in organization by incorporation as nonprofit corporations, others more informal consisting of a group of hobbyists exchanging information, staging shows, etc., without any formalized organization. Some local societies have kept their independence relating to all matters of local concern, but have joined with others in publication of a magazine. In some areas statewide societies have been organized independent of local societies and in some instances state societies sponsor or are supported by local societies. There is nearly every form of organization for specific or for general purposes that the ingenuity of hobbyists can design.

In the early days of the popularity of camellias and sponsoring societies, it was found that there was no standardization of nomenclature, of registration of new varieties, of show procedures, of judging shows nor of qualifications of judges. It soon became evident that standardization on a national scale in many of these matters was most desirable. Additionally, many other reasons, such as publication in permanent form of advancement in knowledge of all things of interest to camellia fanciers, opportunity to meet, know and enjoy the society of hobbyists from other states, caused a small group to establish the American Camellia Society for the principal purpose of doing those things that a local society could not do, but in no way assuming control or direction of matters that were not common to all local societies and were not desirable to standardize nationally. Further, ACS has no authority nor desire to dominate or control the activities of any local society. It has at all times felt that the local society was the firm foundation on which the camellia hobby could prosper and the function of ACS was to set up guide rules, for those locals that wished to comply, to follow.

In order to encourage uniformity in matters of nationwide interest, ACS co-sponsors camellia shows that follow certain basic rules designed and adopted by its Board of Governors and gives awards in such shows that are accepted nationally. There is no requirement that a local show accept ACS as a co-sponsor, but most camellia exhibitors have shown such a strong preference for exhibiting in ACS co-operative shows that most locals have found it to their advantage to stage their shows in co-operation with ACS.

Camellia societies exist from Washington, D. C. to Florida on the East Coast, from the East to the West Coast from Tennessee south, and north on the West Coast from California to Washington. The local situations in this tremendous area vary in nearly every respect possible. To set up standards that are suitable to all areas requires that such standards be very general and only apply to those matters which are fundamental. The Board of Governors of ACS has continuously and consistently kept these facts in mind in establishing rules relating to camellia shows and in particular whenever some new technique is involved.

Those of us in California who have not been closely associated with the camellia groups in the Southern states cannot appreciate what a great boon to the camellia hobby in that area has been the discovery that gibberellic acid will produce early flowers of high show quality. Before gibberellic acid was well known, following a bad winter freeze an unusually large num-

ber of shows were cancelled, those shows that were held were only successful through the use of glasshouse flowers, membership in local societies and the American Camellia Society declined very substantially and when in the year following another freeze occurred, it was thought by some that the hobby was irreparably injured. Now with the use of gibberellic acid, the number of shows for the past season has exceeded any prior year, fall shows are becoming increasingly popular and the enthusiasm for the camellia hobby is growing tremendously.

Under these circumstances it was the opinion of the Board of Governors that ACS should encourage this new discovery of gibberellic acid. It was realized that this is a technique that many hobbyists will not use; on the other hand, where it can be used to produce outstanding flowers at a time when severe winters will not interfere with the shows and the enjoyment of the hobby, certainly its use should be encouraged.

In reviewing the position of ACS in the establishment of show rules, we recognize that basic objectives ACS should seek in the staging of cooperative shows are:

1. *A show should be open to all camellia growers who wish to exhibit for ACS Awards.*
2. *A show should accept all flowers worthy of exhibition that are offered.*
3. *A show should be judged by reasonably competent, knowledgeable and fair Judges.*
4. *All shows should be judged under uniform rules that are fair in application throughout the camellia growing area.*

Therefore, to encourage the use of gibberellic acid and to show the public the outstanding blooms that could be developed with its use, we felt that it was necessary for every show held in cooperation with ACS to accept treated blossoms for display. The rules, therefore, provide that treated blossoms must be accepted in all co-operative shows.

We likewise realized that it would impose a very severe burden upon many of the smaller shows to provide trophies in a large number of various classes. If ACS required chemically treated flowers to be in separate classes, we would have four basic classes of Outdoor Grown Untreated, Outdoor Grown Chemically Treated, Under Glass Untreated, Under Glass Chemically Treated. These four classes would apply to Japonicas, Reticulatas, Sasanquas and Hybrids. For each of these sixteen groups we would have trophies for the Best in Show and for Runnerup; for Sweepstakes and Runnerup; for Multiples; and all the other various groups. This would at least double the number of trophies required to continue the shows on the same basis as previously conducted. Actually, some shows on the East Coast had been organized under this Multiple classification system and it was found that staging the show, judging the show, awarding the prizes and all other matters, became so involved that it was quite confusing and discouraging.

We further found that if local option to each local society was given that none of the basic purposes of the rules would be violated. If a local society wished to have separate classification for chemically treated blooms, under the present rules it is entirely permissible for them to do so; if in a particular area the local society decides that flowers grown under glass could appropriately compete with flowers chemically treated and all the exhibitors are aware that this is the policy of the local society, certainly such a show can be conducted and judged fairly. At one show which the writer observed last year, there were three flowers in the final competition for the Best Flower in the Show, amongst which the judges were completely unable to decide which was the best. Unfortunately, with an even number of judges there was a three-way tie that could not be broken. Additional Accredited ACS Judges were in attendance at the show and their assistance was called upon to break the tie. Of the three flowers, one was chemically treated and two were not, all unknown to the judges, and one that was not chemically treated took Best in Show. A Second-Best in Show was given to another that was not chemically treated, while the outstanding chemically treated flower came in third. Although one Robin doesn't make a spring, still, in this particular case, out-

(Continued on Page 19)

CAMELLIA DESIGN (Continued from Page 9)

the central stamens. It is uncomplicated; it speaks directly and clearly and its impact is quickly felt. It has power, however, to stir the imagination, to ask questions, to create a multitude of ideas and responses because of the various shapes and positions its petals take. Compared with the formal, which is more or less static, the single camellia is quite dynamic. But its chief value is its relative simplicity.

But it is the semi-double which is, far and away, the most dynamic camellia type; it has a far greater range of possibilities in pattern arrangement than any other type and so is the most versatile. It can also be provocative and sometimes mysterious. Its outer row of petals has something of the simplicity of the single, but its amazingly various middle structure seems to have no limit of fresh, new patterns. One type (like FRIZZLE WHITE) in addition to the outer row, has huge single petals thrusting out, or up, at surprising angles, making each flower an individual and unique masterpiece with a character all its own. Looked at more closely, each petal has its character, for there are scarcely two alike. Sometimes a series of these big petals stands straight up in the center for an especially unique show. This surpassingly beautiful arrangement bears the ridiculous name of "rabbit-ears."

The anemone type is only slightly less versatile and the peony is still less, but still very beautiful. Each of these types has its uses; the formal double is quiet and serene, the big-petaled semi-double is an active, dynamic force which suggests movement and dash, and liveliness. Each one is a priceless contribution to human happiness.

COVER FLOWER

With the rapidly approaching Fall season, it is fitting that we grace our cover with a lovely sasanqua and what could be more appropriate than the delicately tinted, coral edged seedling from the well-known McCaskill Gardens of Pasadena, California, so fittingly named CHARMER?

This beautiful sasanqua is described as a large single and the originators recommend it for espaliering, which usage shows off its loveliness to best advantage.

It is our feeling that sasanquas should be more widely grown and this would be a good one to start with. Why not start your Fall camellia buying with a Sasanqua? Refer to Carroll Reiners' excellent list herein.

A. C. S. SHOW RULE POLICIES (Continued from Page 18)

standing cultural practices without chemical treatment stood up in competition with first class culture plus chemical treatment.

Undoubtedly, in some areas chemical treatment of camellias is going to produce better flowers than those untreated and in these areas the local societies may separate these classes. On the other hand, where the local society prefers to have open competition between flowers grown under all different circumstances, this likewise is permitted. In the course of time, if it appears that separate classes should be established in all shows, the local societies can readily take care of so doing.

COMMENTS ON CAMELLIA BREEDING (Continued from Page 13)

tals (see the excellent article on this subject by Harold L. Paige in the November, 1963, issue of this publication) and this is written in an effort to assist, possibly, these people in their efforts. Much of the material in this article represents subjective observations and only partially tested conclusions. I do not intend to imply that other ways are not as good, or even perhaps better, than the methods I suggest. I only point out what seems to work reasonably well for us here. There are obviously many technique variations which the breeder can apply; indeed, there are likely as many variations as breeders. In short, one method is as good as another if it is fast, contamination does not occur and SEED DOES SET.

Good luck this winter, and remember, camels-hair brushes are for painters!

CAMELLIA SASANQUA IN THE LANDSCAPE (Continued from Page 6)

RAINBOW — Single, large, white edged rose. Strong open grower, good espalier, sun tolerant.

ROSY MIST — Large, single pink, blooms mid season. Slow, open, spreading growth.

SEPTEMBER SONG — Large, single, light pink, free flowering. Medium growing, open, spreading, trailing habit.

SHINONOME — Very large, single, flesh pink, free flowering, early. Open, spreading, densely foliaged, vigorous.

SHOWA-NO-SAKAE (Hiemalis) — Soft pink, semi-double. Fairly compact, rather low but variable in habit, spreading, amenable to training, easily kept to 3′ by pruning. Ground cover, foreground or upright specimens.

SPARKLING BURGUNDY — Ruby-rose colored loose peonyform flowers in heavy profusion which hold well, good foliage, extremely vigorous willowy habit which makes a plant wider than tall.

SPLENDOR — Soft pink, darker at edge, free flowering. Very large, semi-double. Bushy open spreading growth.

TAIMEI-NISHIKI — Single, pale pink mottled white, free blooming. Open spreading, vigorous.

DWARF GROWING

BONSAI BABY (Heimalis) — Deep red, small formal double, very dwarf.

BRIGHT SHADOWS — Large white in masses, good foliage. Very good ground cover if pruned.

ELFIN ROSE (Heimalis) — Bright rose-pink, free flowering. Dark foliage, slow growing, very compact, very dwarf, similar to an azalea in appearance.

SHISHI-GASHIRA (Hiemalis) — Semi-double to double, bright red. Slow, compact, prostrate, spreading, sun. The best ground cover.

TANYA — As in list of bushy-growing plants, but it can be dwarfed with *very little* pruning.

WINSOME — White with pink edge, dainty semi-double to anemone, free flowering. Very dwarf, compact and spreading.

Perhaps the reader has noted that his observations may not agree with the plant habits as listed. I must agree that in my observations of these plants, over a number of years, certain specimens refuse to follow what I had concluded as a normal growth habit for them. I have seen, for instance, a dwarf JEAN MAY next to its own kin which were growing vertically erect. We must assume that the multiple factors of exposure, plant competition, maintenance, geographical location, climate, injury, understock, and pruning, have a profound effect upon the camellia's type of growth. An excellent example in plant form influenced by geographical location is shown in the coniferous tree *Libocedrus decurrens* (Incense Cedar), native to California, which is of wide spreading growth in the inland Coast Range areas of Sonoma and Mendocino counties; in the Sierra Nevada mountains it is of normal medium width, and in the San Francisco Bay area it is narrowly columnar.

The four lists of Sasanqua indicate a wide range of plant habits. From these lists we can choose the correct plant form for special needs in the residential and garden landscape. In addition, these forms may be dramatically influenced by the degree of perseverence, patience and time which you wish to spend on the plants with your pruning shears and training wires. Sasanquas are pliable and adaptable. Many varieties respond to use as hedges, espalier, vines, mats, arches, ground covers, bonsai, hanging baskets, standards, etc. In fact, there is room for imagination when training Sasanquas.

I believe the Sasanqua has its place in the camellia world. It should be measured in its own value and not compared to its flamboyant exhibition-flowering cousins. It is an important landscape plant if thoughtfully analyzed for its forms of usefulness. Improperly placed it will not be an addition, but considerately used, it can be a joy in its specialty and a prominent factor in the landscape. And, of course, there is always its contribution of delightful, spicy fragrance.