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DANGER—PROCEED AT YOUR OWN RISK!

An article in one of the local daily papers made mention of a recent meeting of chemical society engineers at which was stressed the need for development of effective insecticides that are not harmful to humans. Now that this serious fault has been publicly admitted by the profession, perhaps it is time for some plain speaking on the subject. Personal experience and that of several friends and acquaintances has established beyond all doubt that the toxicity of some of the present day insecticides is high to the point of being critically dangerous. This is especially true when used indoors or wherever there is lack of air movement to carry the vapors or dusts away. It is not too long ago that we read of a truck driver having died within two hours of being exposed to the fumes of a broken container of insecticides in a van-type truck. As we recall it, the chemical was Parathion. The potency of this chemical is about five times that of Nicotine which, in itself, is extremely poisonous to men and animals. Parathion is one of the phosphoric acid compounds and the group as a whole is so high in toxicity to humans that most of them are not yet available for the use of amateurs.

Our own trouble came from using a Lindane-Malathion compound in the greenhouse without a respirator, even though all ventilation possible was open and the breath was held while spraying, then moving outdoors between applications. This particular well-known insecticide is extremely effective, eliminating all aphids and other pests for a month or more before another spraying was necessary. However, notwithstanding what seemed reasonable precautions, after a period of time there was an inflammation of the throat, which persisted for almost a year. The throat specialist consulted counseled against the practice and subsequently advised that he had another patient with exactly the same symptoms shortly after our experience, who had been using the same spray in much the

same manner—thus a satisfactory confirmation. Two different camellia friends were stricken some years ago as the result of using highly toxic sprays, one (an MD himself!) being hospitalized for three days. Perhaps there is nothing for sale in which the expression *caveat emptor* ("let the buyer beware") is so apt as in the purchase today of insecticides.

A concomitant of newness is lack of experience and there is as yet little historical background on many of the insecticides, including the vital question as to their *cumulative effect on humans*. Spraying is something that must be done at regular intervals and thus it is extremely important to know whether the little that is absorbed each time through the pores and lungs, a single exposure to which may not be injurious, becomes a menace through building up in the system. The principle is much the same as that embodied in lung cancer. We realize this is a very technical subject and one that may be slightly over our head, but urge that you reflect very carefully on these plain words which I quote from the 1956 Supplement to the Royal Horticultural Society's Dictionary of Gardening:

Regarding PARATHION: ". . . the greatest care must be taken to protect the user from accidental contamination of his skin and the inhalation of spray droplets. At the first sign of headache, dizziness, or nausea the operator should seek the open, soap and water, fresh clothing and medical advice. All containers, when empty, should be buried or burned."

Careful camellia growers who do a great deal of spraying wear protective rubber gloves and clothing, goggles and perhaps, most important of all, a respirator. The latter is especially necessary when dusting with any of the potent compounds, and a good one can be purchased for just a few dollars. Until we have really safe insecticides, we urge that you use extreme care in handling them, indoors or out.

AIR-LAYER, AND FEED LEAVES

Alma B. Bond, Washington, D. C.

In 1953-54 I had an experience in air-layering a camellia branch that convinces me that feeding the leaves of cuttings while they are being rooted tends to hasten and increase rooting.

The experiment was accidental. I had put an air-layering wrap on a girdled long camellia branch in August, so late that by frost time I found only a callus at the wound. Just three fuzzy bulges showed where roots were emerging.

I did not know then that air layers will withstand freezing weather and can even be left on more than one year to root, if the wrappings are kept intact and the encasing sphagnum does not dry out. So I cut the branch off below the wound, propped it up in a pot of soil, and brought it into the greenhouse. The sphagnum was left around the base.

The branch was over two feet long, and had eight buds as shown in the first picture. It was really just an over-sized cutting with a callus, willing to root. The problem was to carry the big thing along until it had roots.

I sprayed the leaves every other day, or at least twice a week, with a weak solution of Folium, a leaf-feeding liquid plant food. At first, I was careful not to let any

of the solution drip down on the soil, lest it cause unhealthy conditions in case of no root action. Finally, in March I decided to look below the surface. Strong, thick and tiny roots—enough to begin supporting the plant—stretched across the 8-inch pot. I reduced the foliar feeding.

The picture at the left was taken at this time. The plant had lost several leaves but was starting new ones. All buds dropped, but my greenhouse stays too warm at 60°F and above for camellias to bloom, except a white one.

The other picture was taken in August 1954, just a year from the beginning of air layering. At this time I planted the camellia outdoors. By fall the plant had 99 buds. Now the plant is large and healthy. Whenever I see it, I think of the double miracle that brought it into being as a large plant—first, callusing of the wound with aid of Air Wrap, second, finishing the job of rooting without aid from the parent plant through use of foliar feeding.

I don't know what the parent is, but I call this plant MINERVA.—(Reprinted from The A.H.S. Gardeners Forum, August, 1958.)



CAMELLIA PROPAGATION AT GLENN DALE PLANT INTRODUCTION STATION (Part II)

John G. Worman, Baltimore, Maryland

(This is the second and final installment of a revised article originally published March, 1958 in the *Newsletter* of the Camellia Society of the Potomac Valley, the first installment of which appeared in our April, 1959, issue through the courtesy of the author and the aforementioned Society.—Ed.)

Camellia Japonica from No. Japan

One of the most important results of Dr. Creech's first trip was the introduction of plants and seed of *C. japonica* from the northern limit of its distribution on the Peninsula of Aomori at the northernmost point of Honshu Island. This farthest north colony is scarcely known and plants from here had never been introduced previously. The camellia colony grows on a series of low hills that fall directly to the ocean. The general plant growth is restricted and often grotesque, because in the winter, cold winds and blizzards sweep down from Asia. The camellias are many-stemmed trees that grow moundlike over the face of the hills with such companion growth as black pine, multiflora rose, and plum yew. Exposed to the full effects of sun and wind, the growth is dense and twiggy.

Flowers are single and pale red in color and bloom from the middle of April until the latter part of May. A liberal crop of fruit is produced and numerous seedlings spring up among the older plants, so that the colony appears to be on the increase.

It is noteworthy that the trees are much too tall to be protected by the snowfall. Probably these trees survive because the combination of the native mulch plus the snow around the roots provides an even temperature of about 32° F. so that the roots are not injured. Explanation for the presence of these camellias seems to be that the Tsushima Current, which flows from south to north along the eastern coast of Honshu and actually enters the Bay of Mutsu. Most Japanese scientists now agree that the seeds falling into this warm water (perhaps carried out to sea by local rivers) have been brought into the Bay of Mutsu and deposited on shore at Kominato. The Tsushima Current is tepid and serves the double purpose of transporting the camellia seeds and warming the air in this region sufficiently to permit the camellias to survive.

A number of seedlings and 600 seeds were collected by Dr. Creech, and some of these were recently seen by the author making vigorous growth in a greenhouse at Glenn Dale. These introductions should be of considerable value in the breeding of hardier ornamental camellias. Winter temperatures near the city of Aomori at Kominato go to -5° F. Beyond Honshu to the north there are no other camellias. A study indicates that analogous climate in the United States occurs at Kingston, Rhode Island. There rainfall is between 40 and 60 inches annually and is distributed uniformly over the entire year. Although there is snow, it never reaches the proportions such as in the habitat of the snow camellia, *rusticana*.

Camellia Rusticana

C. rusticana has attracted considerable attention in the past few years. Although only recently known scientifically, this species was known at least eleven centuries ago to Japanese horticulturists. There is little doubt that *rusticana* is very closely related to *C. japonica*. The only question is the degree of relationship. Regardless of its status, *rusticana* is an interesting camellia, and there are a number of named and unnamed selections. In the Glenn Dale collection, Dr. Creech stated, they have 8 named and 10 unnamed garden forms in addition to 6 collections of wild seed obtained from Tokyo botanists. Among the garden forms are white, pink, and red, both single and double flowered. They came from the deep mountainous regions of the north-eastern part of Honshu in Niigata Prefecture, area of the highest winter precipitation in Japan where plants are blanketed with snow the entire season. According to the Japanese, it can be safely said that it is the "snow camellia" and its natural hybrids that have given rise to the great variability in the floral characteristics of the present day "garden camellia." The

Ralph Peers are testing *C. rusticana* seedlings at their mountain home at Lake Tahoe, California (6250 feet above sea level). Heavy snows have covered the four plants during two winters and flower buds are expected to open for the first time this spring.

The approximately 150 three-year-old plants of both garden forms and the wild forms in plantings at the National Arboretum will never have the snow-cover protection that they are accustomed to in their native habitat. Since these plants have only been in the permanent plantings one year, it will be some time before one will be in a position to appraise their relative hardiness and desirability as flowering plants.

Camellia Sasanqua

C. sasanqua grows wild in the provinces of Kyushu, Shikoku, and down through some of the Ryukyu Islands. Historically, however, the South Island of the Japanese Archipelago, Kyushu, is considered as the sasanqua homeland. This is no doubt due to the fact that Dutch trading companies established outposts in Nagasaki, the largest city of Kyushu, during the 1600's. *C. sasanqua* is not as hardy as *C. japonica*, a point readily seen by a comparison of the natural distribution: *C. sasanqua* is limited to the southern islands while *C. japonica* ranges far to the north on Honshu as previously described. Wild form sasanqua has small thin leaves with crenulate margins and small white flowers quite distinct from the improved garden varieties familiar to most of us. Dr. Creech's collecting was centered on Shikoku since this is the least visited of the Japanese islands, and there are old gardens such as at Kotohira where large sasanqua trees flourish today. Among the sasanquas collected were Ginryu, Hiya Asobi, Motio-No-Sio, Negi-Si Beni, Oho-Mi-Goromo, Setugetuki, Setsusan, Showa-No-Sakae, and Tuki-No-Kasa. From a shrine garden near Kotohira came Kagawa Ken. The above three names which appear to be familiar will be compared with varieties grown in this country under the same name. (Ginryu according to the Nomenclature Book is *C. vernalis*. A sasanqua listing is spelled 'Setsuzan'.

Showa-No-Sakae is classified as *C. bimialis*.)

Camellia Species in Okinawa and Formosa

In the Ryukyus, particularly Okinawa, there are a number of camellias that will be of botanical if not of horticultural interest. First of these is *C. miyagii*, a small tree which grows in the mountains of northern Okinawa. Dr. Creech gathered seed from a plant perhaps 8 feet tall growing in full sunlight on a small hill above Genka. The species is closely related to *C. oleifera*, has small white flowers that bloom during November and December. The leaves are thick like those of *C. oleifera*.

Of camellias in cultivation, *C. lutchuensis* is the most closely related to the species from mainland China, that is *C. cuspidata* and *C. fraterna*. Its leaves are small, dull, and finely serrate. Flowers are white, about 1 inch across. Plants of *C. lutchuensis* are growing in the Glenn Dale collection and are interesting because they bloom rather late, from March to mid-May.

Another new species which occurs on Okinawa is *C. tegmentosa*, a sasanqua-like plant, which blooms in the autumn. Unfortunately, specimens did not survive the journey to Maryland.

C. hozanensis is probably only a form of *C. japonica*, differing in the smaller pale red flowers with funnel-shaped corollas. *C. japonica* var. *macrocarpa* grows in the mountains of Okinawa, also Kyushu and Shikoku. It is a distinct variant of *C. japonica* with narrow leaves, flowers single, red. Both of the above japonicas are used by the Japanese in woodworking because of the superior quality of the dense, hard white or reddish-brown wood.

A number of species are native to the island of Formosa, namely *C. caudata*, *C. salicifolia*, *C. brevistyla*, *C. transmokoensis*, and *C. transarisanensis*. Five miscellaneous plants have been received from a collaborator in Formosa that have not as yet been identified in connection with the above named species.

Camellias in Hong Kong

The flora of Hong Kong is tropical, yet the climate is subtropical. The win-

(Continued on page 14)

A SYMPOSIUM ON SUMMER CULTURE

Introduction by the Editor

The camellia being a shade and moisture loving plant, summer is the time of danger, more than any other period of the year. The first evidence of trouble is wilting of the leaves. This is the plant's defense against hot weather, transpiration of moisture through the leaf pores (stomata) being reduced by the simple expedient of wilting, which causes contraction of the openings and thus reduces the loss of water. Wilting also causes less leaf surface to be exposed to the sun. To give some idea of what transpiration means, it has been calculated that the average oak tree gives off 28,000 gallons of water during its five most active months! Moisture, then, in adequate amounts and provided as uniformly as possible, is the most vital consideration of all in the summer, if you would have healthy camellias.

It seems logical to argue that the camellia needs the greatest amount of moisture when it is developing new growth and when it is flowering, simply because both of these processes are dependent upon the availability of generous amounts of water, of which the new shoots and blooms are composed almost entirely. This would place the heaviest need in winter and spring, which is, happily, the rainy season. However, evaporation is so great a factor in summer and fall that, in situations or climates where there is no help from the rains at that time of year, the need for artificial watering is then at its peak.

The coming of warm weather also hatches out all the pests which have lain dormant over the winter, and, according to Nature's grand scheme of things, they come on the scene simultaneously with the soft, new leaves and shoots which constitute their food supply. Thus the would-be camellia grower has a multiplicity of problems arise just about as soon as his "honeymoon of blooms" is over. The need to make new growth for next year's flowers also requires feeding the camellia, so that, all at once almost, we are confronted with watering, fertilizing and spraying our plants faithfully,

if we would excel, until the new growth has been made and has hardened. At that time the plant's energies are diverted to the processes of reproduction—the development of buds for next year's blooms—and it seems logical to assume that the camellia should then enjoy a respite from activity, and enter a brief period of rest. Consequently, the "dog-days" of late summer are a good time to ease up on feeding and water no more than necessary. By so doing, unwanted second growth cycles are avoided, which interfere with bud development.

The summer culture articles which follow, written by experienced growers whose skill has been amply tested, deal principally with container culture, which is so much a part of the California camellia scene. In other sections of the country which enjoy summer rains, and where camellias are grown much more extensively in the ground, where they must be placed eventually if they are to continue to prosper, the requirements are not so critical as to watering and fertilizing. The moisturizing-retaining ability of soils differs considerably, but on the average a deep soaking about once a week will prove quite satisfactory. For this purpose, it is hard to beat the fine spray and varied distribution patterns which the so-called "soil-soaker" perforated plastic hoses afford, which economize on water and permit deep penetration, even on a hillside. Most valuable of all, perhaps, is that natural food, conservator of water and insulator against heat—the mulch of humus—that the writer regards as indispensable in the garden. Nothing that we have ever done to our camellia grove planting has ever been so beneficial as a two-inch mulch of pine needles just as it came from the woods, part fresh and part decomposed. This is Nature's way and hard to improve upon.

Mr. O. L. Davis, Orinda, California

To me, summer care of our camellias is not much different than the care I give them the rest of the year . . . a little more attention to watering, new growth to watch for aphids instead of on buds, and

more pruning and pinching of tips to control the growth the way I want it.

Soon after I became interested in growing camellias I noticed the great differences in the way various successful growers cared for their plants. Some fed their plants the year around, others fed only in the spring and early summer. Some used oak-leaf-mold mulch, others pine needles and some used none at all. Some pruned only in the early spring, others pruned whenever they noticed a branch or shoot that should come out.

On the other hand, I also noticed growers who apparently gave exactly the same care as some successful grower but who never seemed to attain very good results. However, on closer examination, it seemed that these latter growers were the ones who were not consistent in their care. Either they were too easily swayed by the advice of others so that they were constantly trying new things, or they forgot to water occasionally. I often hear people telling how sick their yards looked when they got back from a vacation and how fast they "pulled out of it." However, I don't often hear this type of grower talking about blue ribbons from his camellias.

I believe that the essence of good camellia culture is consistency. Provided a reasonable procedure is adopted, the plants will accommodate to this procedure and be happy, but they don't like change. We had always grown our plants in containers but three years ago I transplanted about a dozen into the ground. We still have not had as good blooms from these in the ground as they were yielding in containers, but they were better this last season, and I am hoping that they will have fully adapted themselves to the changed environment by next season.

With the above in mind I take care of our plants the year around in the way that is easiest for me. I use a liquid fertilizer, not because it is better, but because it is the most convenient for me to use. I feed as I water—by means of an aspirator* between the faucet and the

hose, and at regular intervals the year around. I water about twice a week throughout the year, with some overhead sprinkling in very hot weather. My neighbors think I'm crazy when they see me watering in the rain, but it takes a lot of rain to equal one thorough watering and I have seen too many container-grown plants drooping a day or two after a rain. I prune whenever the time permits and rather heavily. Disbudding is started as soon as I can differentiate between flower and growth buds and continued until the plants are in full bloom. I spray the containers and the ground around the plants with "Dioldren" three or four times a year to control the ants. Other sprays may be as effective initially but I know of none that lasts as long. With the ants under control, I am able to cope with aphids, using my thumb and forefinger. Any scale found is eliminated with Malathion. I have been picking up petals for seven or eight years and still have a little petal blight.

This procedure works for me. Quite different procedures are used by others who grow just as good and, in some cases, better flowers than ours. If you choose a routine which will supply your plants' needs and practice it *consistently*, I think you will be able to grow as good flowers as your particular climatic conditions will permit.

Mr. Woodford F. Harrison, Berkeley

1. Maintain uniformly moist soil. Depending upon the temperature, irrigate container-grown plants two to three times a week, and plants in the open ground not more than twice a week.

2. Fertilize at regular intervals, through July, tapering off frequency in August. Frequent very light feeding is better than infrequent heavy feeding.

3. Shape plants by pruning and pinching new growth, which is best done during the early growing season.

4. Watch the new growth for appearance of aphids and leaf-hoppers. If bothered with them, spray at intervals of two or three weeks. Leaf-hoppers have a three-week reproductive cycle, and therefore cannot be kept down by anything less than spraying every three weeks.

*Siphoning device.—Ed.

5. Spray the soil around the base of the plant with chlordane for elimination of brachyrhynus. Once every three or four weeks is adequate.

6. Re-potting of container grown plants should have been done during winter months, although it can be done at any time if the roots are not disturbed very much.

7. Watch the color of the foliage. If it is not a good, characteristic dark camellia green, it may be caused by too direct sun's rays. If so, provide a little more protection. Plants that have a large number of yellow or partially yellow leaves caused by virus should also be given more protection from direct sunlight. A plant of that type is not able to take as much sun as one growing with full green color. Yellow foliage can also be caused by lack of nitrogen or by high salt content in the soil.* Good treatment, regardless of which of these two conditions exists, is to first flush thoroughly with water, or even immerse the container in a tub of water and allow to soak for 12 hours. After this, fertilize with a high-nitrogen fertilizer.

8. Die-back seems to be at its worst during early summer when the plant is at the height of new growth. If a branch or twig shows sudden permanent wilting of the leaves, cut off the affected part at a point well back of the affected portion. Dust the wound with fermete, or some other good fungicide, and seal. After this, place the plant where it is fairly well protected from direct sun's rays until it fully recovers and shows no tendency for other parts to die back. A plant in the open ground should have additional shelter built over it.

9. Of course, every wise camellia grower has kept old flowers and petals picked up off the ground, but there are sometimes a few late blossoms that fall and may be neglected. It is therefore good practice, sometime in early June, to make an extra inspection for the purpose of assuring complete removal of all old flowers and thus preventing any possibility of petal blight spreading.

Mr. Harold L. Paige, Lafayette, Calif.

The care camellias receive in the months immediately following the blooming season will have much to do with success or failure in the next blooming season. The spring and early summer months can be very busy ones for the owner of a large collection.

The growth processes must be met with the proper care at the right time. Timing is important since nature does not wait for the procrastinator. Good results come from prompt action and poor results from delayed action, so we may as well take the hint and start early.

In discussing "things to do" for a container collection it is hard to be specific. Often it is necessary to deal in principles or generalities since it could happen that methods used in one location might not bring about such satisfactory results for someone whose climate is totally different or whose soil or plant mix is different. However, the following methods have yielded some measure of success in Lafayette.

1. *Check plants for size of container.* If any are badly root-bound, repot immediately—that is, if new growth has not gotten too big a start. Otherwise hold until late August or September. After re-potting, place in a rather shady location until the roots have had an opportunity to grow out into the new soil. There are several indications of a rootbound condition. The plant label should give the last potting date. In some instances this may not mean too much as some varieties have the ability to support a large top on a rather small root system, notably the Daikaguras and Reticulatas. However, the date will be very helpful in making a decision. A very good indication that a plant is rootbound is rapid drying out or inability to keep the foliage from becoming slightly limp in hot weather, unless that plant is given more water than the others. It may happen that a certain plant will drop a large proportion of its leaves. This usually means that it has dried out and lost part of its feeder roots at some earlier date, probably the preceding year. Vacationers, hunters and fishermen often leave their plants in incompetent hands,

*Also, by poor drainage.—Ed.

WHY CAMELLIA RATING?

Brief mention was made in our last issue of the fact the American Camellia Society has decided to go ahead with the Camellia Rating Plan, following the general lines of the test conducted last year under the supervision of the writer which was fully reported in the 1958 YEAR-BOOK. This is a significant step in that it will be the first time any amateur organization has endeavored to systematically evaluate and grade, over a period of years, the hundreds of camellias now in commercial propagation. At the same time, it is a very formidable undertaking and an endless task, for new camellias are being developed at a rate almost as fast as they can be properly appraised. It is planned to have a reasonable number of old and new camellias rated each year by a team of qualified appraisers evenly distributed throughout the United States, and the regional and national average ratings thus determined are to be published as an added service by the American Camellia Society.

In some minds, the question may arise, "Why go to all this trouble?" It shall be the purpose of this article to attempt to explain what we seek to accomplish and why we feel it is a worthwhile effort.

To begin with, the idea of grading or judging the relative merits of ornamental plants is not new. The continuous stream of new introductions years ago convinced the American Rose Society of the wisdom of going to the expense of "rating" roses annually on a national basis. Their "Proof of the Pudding," which is the department in the rose annual devoted to this subject, is now regarded by many rose fanciers as the most important single service rendered to them by that society. It tentatively rates new introductions just as quickly as sufficient experience can be gained. Such tentative ratings are subject to modification based on the more complete reports possible as the plant gains widespread distribution and eventually a permanent rating is published. Thus there becomes available a most complete, thoroughly objective evaluation, for guidance in conjunction with the annual "selections" announced by the trade.

It may be said, then, that the constant flood of new introductions and the publicizing of sometimes ill-chosen "selected" topnotchers in themselves constitute sufficient reason for amateur organizations to make their own ratings and classification of ornamental plants based on systematic analysis. However, there is something more than this in our case. Until a few years ago, there were only the japonicas to consider. Now we have the reticulatas and some hybrids and, in a few years there will be a veritable deluge of many kinds of the latter, concerning which almost no background of experience will be available. As with anything else that is new, some of these are going to be expensive. It is essential, therefore, that before this happens we get ourselves into a position where those who wish to do so may have the benefit of the recognized appraisers' verdict, or else do their own judging based on established rating principles. This would be a sort of "look before you leap" proposition.

The more knowledge and experience a person possesses, the less advice he needs. Certainly this is as true in choosing camellias as in anything else. On the other hand, the newer one is at the camellia game, the more information he wants and should get through his society. Camellia rating is aimed directly at the novice but it is surprising how many things there really are to consider when it comes right down to an overall evaluation of a camellia. Take for example the matter of Growth Habit. How often have we seen the mistake made of planting a leggy grower where a compact one is needed, or a spreading grower where there is space only for one that is columnar? After a few years, a difficult job of transplanting often is necessary, or the plant is cut down and grafted—all of which could easily have been avoided. Then there is the common complaint that a flower is too fragile or damages too easily, or that it fades in the sun or purples from the cold, or it may fall very quickly, or shatter badly, or the camellia may be lacking in mass blooming effect. Perhaps, worst of all, the plant is a delicate, weak grower.

All of these faults are common and therefore taken into account in determination of the scoring.

Of course, in the final analysis it cannot be argued that the individual is the one to decide what kind of a camellia he wants—and for what purpose—we merely attempt to guide him. He may be willing to put up with *anything* just to get a stunning or flashy flower. That is his privilege, although he certainly will be the exception rather than the rule. We further recognize that a Camellia Rating System should be broad enough to assist the person interested in camellias for show purposes, even though designed primarily for the casual (and far more common) grower whose first concern is to get a plant that he will be happy to have in his garden. We accomplish this in rating by first dividing the camellia into its three main features—Plant, Flower and Flowering Habit—each of which is made up of a number of different characteristics scored for separately and totaled so that the value of each can be determined. Here, again, we are following established principles, for judging rules at all the shows require consideration of the several characteristics of the one feature concerned in the scoring (the flower). We merely extend this principle to cover the plant as a whole. By so doing, one familiar with rating will know immediately whether the particular virtue of the camellia is beauty of the Plant, the individual Flower, the beauty of the massed florescence, or whether it is an all-around good camellia.

It is generally agreed that the present practice of judging seedlings at camellia shows is quite inadequate, because it takes into consideration the flower, only. As anyone knows who grows seedlings extensively, there is a great deal more to the successful development of a good new introduction than merely the flower, important though that certainly is. An exhibit of cut flowers is but *one* of the usages of a camellia, and quite aside from the very important consideration of whether the plant grows and looks well. We now have so thoroughly covered the field that the specifications a seedling must meet today are very broad indeed—

it is not enough to rate high in only one feature.

One of the more common complaints about many of the new introductions is the lack of individuality—they are “too much like” something else. However, the flower is only part of the story. How about the comparative value of the camellia as a whole? Here is another important function of camellia rating, for, not only does it call attention to the similarity and identify the varieties which are alike, the rating also automatically indicates which is the better, thus assisting in the up-grading of those grown. This constitutes *improvement*, what should be one of the prime objectives in breeding camellias, and something to be encouraged.

Another complaint is that camellias which do well in one part of the country sometimes prove to be indifferent or poor performers in another—a matter of plant or flower response to climatic environment. By publishing regional ratings, some indication of performance in the individual's own locality will be at hand, and thus another common cause of disappointment ameliorated.

Finally, the desirability of standardization and common definition of evaluation terms are among the more important reasons for taking this step. One person's idea of what is meant by “fair” or “good” may not be the same as another's, and, of course, there are varying degrees of “fair” and “good.” It is far easier to express gradations in figures than in words. If, for example, you know that a “good” camellia is one rating between 70 and 79, a rating of 77 tells very clearly *how good* it is. This is what we mean by “definition.” By the same token, it may very well be that there are authorities at hand perfectly capable of judging the qualifications of a camellia, who could tell us whether we should try to grow it. However, a number of questions arise. Is one person's opinion or experience sufficient? Is personal preference or prejudice involved? Have all the factors which enter into the proper evaluation of a camellia been taken into consideration? When rating flowers at a camellia show, we do not operate on the “sole judge” principle.

Is it not even more important that we have a consensus or an "average" when judging the camellia *as a whole*? This is what is meant by "standardization." Anyone who deals extensively with figures has a high regard for the balancing effect of "averages." This is possible only through *numerical* ratings—a universal language that needs no emphasis or inflection to convey its exact meaning.

To summarize, then, the broad objectives of camellia rating, stated briefly, are:

(1) The establishment of standard rules of evaluation and a universal definition of "grade" through the use of figures, resulting in the avoidance of the waste of time, money and effort on poor camellias. This is accomplished by:

(a) Assisting in the intelligent selec-

tion of camellias according to the particular purpose or feature most desired;

(b) Gradual elimination from the scene, by publicizing how poorly they rate on the basis of scientific analysis, of those that are unworthy;

(c) Indicating variation in performance under different climatic conditions and the risks involved, especially where heat or cold tolerance is concerned;

(d) Calling attention to similarity between two or more varieties, where it exists, especially those so much alike as to constitute unwanted duplication.

(2) Setting up of a check-list for the guidance of the would-be purchaser, thus creating widespread awareness of what factors make a camellia good or bad.

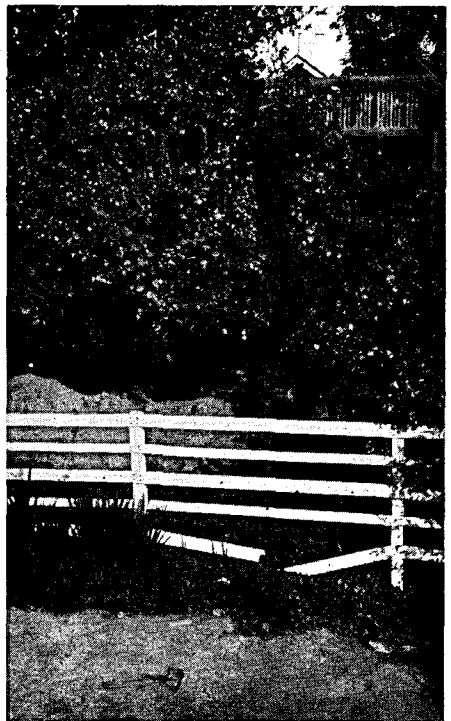
"CALIFORNIA" ON THE MOVE

This story concerns what must have constituted one of the major operations in the entire world history of camellia transplanting—the moving of the parent tree of *C. japonica* CALIFORNIA from the John C. Irving home in Pico, California, to "Park Hill," beautiful estate of the Ralph Peers in the Hollywood Hills above Los Angeles, a distance of some 30 miles. The tree itself, a perfect example of camellia symmetry on the gigantic scale, is about 75 years old, having been planted by Webster Cate in 1888, as a small 3-year-old seedling for which he paid 25 cents, fresh off a Japanese tramp steamer. Planted in rich silt soil, the camellia did not bloom for thirteen years after planting (strong evidence that it was a seedling) but is now reputed to bear up to 3,000 blooms yearly. At the time of moving, it measured about 30 feet high with the same width and the trunk had a diameter of 15 inches. Including the crating and structural supports, its overall weight when moved was about 15 tons.

For six months prior to moving, the excavation and root-cutting was conducted a little at a time, so as to lessen the shock. When uprooted, the hole was seven feet deep and as big as the basement of an ordinary house. Very little trimming of the above-ground part of the plant was done and its beautiful ball

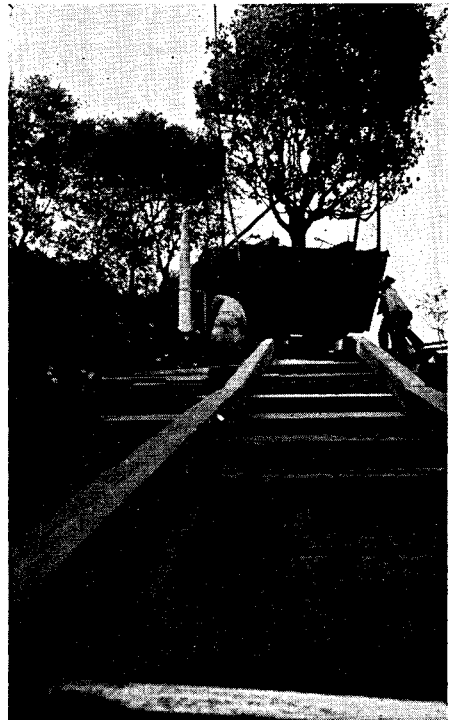
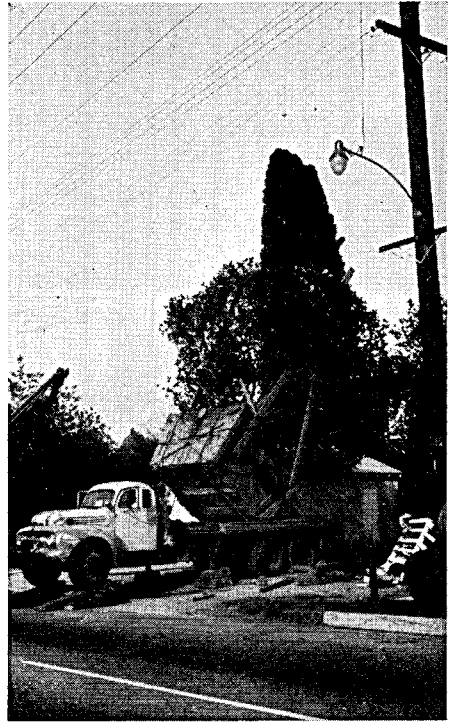
shape has been preserved. The famous camellia tree was uprooted April 12, 1959 and placed in its new location the following day.

One of the greatest problems involved in the transplanting was that of getting



the camellia into its future home on a very steep, terraced hillside garden, which was already thickly planted and completely inaccessible to heavy vehicles on the ground level. This handicap was overcome by hauling the 15-ton load up a street overlooking the garden, then skidding it down a 200-foot embankment to its final resting place through the use of cables, winches and rollers (see cuts). The undertaking was thus as much an engineering as a horticultural feat.

This camellia was originally named DURFEE ROAD PINK in 1941 by E. H. Carter of Monterey Park, the first nurseryman to propagate it, but the name was changed to CALIFORNIA two years later at the suggestion of Mr. Vern McCaskill. It is an excellent performer, being a sturdy grower with large, leathery leaves. The flower is quite spectacular, large with heavy petals, rose-pink and ranging from almost single to loose semi-double. It is a wonderful thing for the camellia world that this old plant has been preserved and will be available for camellia fans to enjoy.



CAMELLIA PROPAGATION AT GLENN DALE (Continued from page 6)

ters are normally cool and dry, however (frost is almost unknown) and the summers hot and wet. For trees and shrubs this alternation results in a defined resting period during the winter. Enforced rests between flowering periods seems to be the explanation for the great wealth of flowers of large size and richer color being produced here and not in the area immediately south.

There are several species of camellia wild on the island and on the mainland, but all save one have white flowers. *C. hongkongensis*, with red flowers, is indigenous to Hong Kong district where it was originally found. This camellia is now one of the commonest species of its genus on the island; in the space of ninety-nine years, under protection, it has multiplied and spread until there are probably hundreds of trees in the district.

The flowers, which are solitary or in pairs and held upright or slightly drooping, are 2 inches across. Their color is pure crimson, and the hundred or more bright yellow pollen-covered anthers show up in brilliant contrast. The flowering season extends from the end of November to mid-March. At Glenn Dale the author viewed a dozen large plants with a number of main shoots terminated by enlarged bracts from which young shoots were emerging. These bracts are a peculiar shade of pink on the outside and creamy within. The young leaves are highly glossy on the upper surface and of a most unusual color. In reflected light they appear olive-lead color above, deep mauve below; if held to the light, they appear purple. Once seen and recognized, the young leaves of *C. hongkongensis* could scarcely be confused with those of any other plant.

The discovery of *C. grantbamiana*, a distinct new species of camellia found growing in an area just northwest of the port of Kowloon on the island of Hong Kong, was made quite accidentally in October, 1955, by a Chinese forester. This is especially surprising as the flora had been examined by a succession of botanists and collectors since 1841. The bloom is the largest found on any species camellia. It measures 5 to 5½ inches in diam-

eter and has eight white petals with a cluster of golden stamens in the center. So far only one plant, a small tree about 12 feet tall, has been found growing in partial shade on the edge of a wooded ravine. Probably the tree has hereto been considered a *Gordonia* by the passing forester. Working through the American Consul, Dr. Creech secured scions of this striking species from the Gardens Department, Hong Kong. These were packed in polyethylene bags and dispatched by air pouch to Washington, D. C. where they were examined by the quarantine inspectors and sent on to Glenn Dale for propagation under quarantine. Recently small plants were distributed to plant breeders around the country for study. The writer saw four thrifty 6-inch plants in a greenhouse at Glenn Dale.

In the same manner material has been obtained from Indonesia, but few species are native to that area of the Far East. Only *C. lanceolata*, a species from the Celebes with small white flowers, is of interest, for it is not closely related to any of the camellias now in cultivation.

Fortune's "Yellow Camellia"

The supposedly lost "Yellow Camellia of Robert Fortune" was discovered to be extant in Portugal by the Ralph Peers in February, 1952. *Camellia* var. *Jaune* was originally found by Robert Fortune in a Shanghai nursery and is therefore presumably of Chinese origin. At the time of this discovery, 1850, there were many ships operating between Shanghai and Nagasaki in Japan. Thus it is also possible that this variety originated on the island of Kyushu.

Despite Fortune's prediction that this variety might be hardy and a good grower, many years later it was to be found at only one place in the world — the nursery A. Moreira da Silva & Filhos, Limitada in Porto, Portugal. In looking around the nursery that day, Mrs. Ralph Peer was first to notice a plant having small fleshy leaves, different from any camellia with which she was familiar. Shr. Moreira informed the Peers that this was a novelty of no great value — blossoms rather small,

a white single containing so many yellow petaloids as to be quite different from other varieties. Immediately the Peers thought of the Yellow Camellia which Fortune brought from Shanghai more than one hundred years ago and which they had sought continuously during their 1949 trip around the world. When Mr. Peer inspected the plant carefully, he found a lead tag marked "Jaune." This completed the identification, as the Fortune camellia was given that name by the Belgian nurseries which propagated it for the continental trade in the mid-1800's.

The proprietor explained that the "Yellow Camellia" was very hard to propagate. It could only be reproduced by grafting, and the average "take" was only two out of one hundred. This fact, no doubt, accounts for its near disappearance.

Dr. Creech eventually succeeded in introducing *Camellia* var. *Jaune* by having plants grown entirely in sphagnum moss at the origin and shipped by air. All previous shipments of this camellia which came bare root, even though by air, had failed. After quarantine Ralph Peer added *Jaune* to his camellia collection at Park Hill, his Hollywood home. Similarly Frank Griffin, Sr., editor of *The Camellian*, obtained a plant for outdoor growing in Columbia, S. C.

OUR COVER FLOWER—"BETTY SHEFFIELD SUPREME"

This new sport of *C. japonica* "Betty Sheffield" (A.C.S. Registration No. 381) was discovered in January, 1956, on a plant of "Betty Sheffield" purchased by Mrs. Greene W. Alday, of Thomasville, Georgia, from the Thomasville Nurseries, who are now propagating it and hope to offer plants in the Fall of 1960.

It is one of the most perfect examples of the rather rare marginated type of camellia, which we feel should properly be designated as a separate class—the "picotee" camellia—because the markings are distinctly different from the usual two-tone or "variegated" flower. The semi-double blooms resemble the parent in form, averaging $4\frac{3}{4}$ " in diameter and 2" high, but the pure white background is set off very strikingly by a narrow, deep pink (almost red) border on the outside margin of each petal, beautifully accentu-

ating the contours. Texture and keeping qualities are good and it blooms in mid-season. Of the ten blooms had to date from two grafts, all but one (90%) have come true.

One must admire the self-abnegation of the originator, Rosalyn Alday, for insisting that, because this was a sport, it should bear the name of the parent to so indicate rather than her own, which is both exemplary and in the true amateur spirit.

This is the fourth good sport had from "Sporting Betty," having been preceded by "Pink Betty Sheffield" (deep pink), "Blush Betty Sheffield" (light pink) and "Variegated Betty Sheffield" (deep pink, mottled white), while a fifth, named "Blush Betty Sheffield Supreme," is on the way, we understand.

At some future date it is probable that plant exploration work on the mainland of China will be resumed. The Provinces of Fukien, Yunnan, and Szechuan have thus far proved to be the principal sources for camellias growing wild.

For the future, the most exciting possibility is that botanists will be able to enter the northern part of Indochina and bring out plants of the Camellia species bearing yellow, purple, and coral-colored flowers. Yellow—*C. flava* and *C. fleuri*. Purple—*C. amplexicaulis*. All of these species are known to exist. Species from the region, however, are all tender and will be limited to the very mildest parts of the country or to conservatories.

If we could use the yellow flowered species for hybridizing purposes, we could bring out the same interesting color combinations which one finds in our modern roses. This, it would seem, is the most important prediction for the future—the introduction of yellow as a common camellia color.

For the present, however, the Agricultural Research Service has added a number of species to those previously in cultivation, and the testing of these will provide opportunity to improve our cultivated varieties and also greatly increase our knowledge of the genus Camellia.

SYMPOSIUM ON SUMMER CULTURE (Continued from page 9)

hoping for the best—sometimes with disastrous results. In cases of this kind a root pruning may be needed with a corresponding cutting back of the top. In this event a larger container may not be needed.

2. *Check plants for drainage.* This is something that will not wait for a more convenient time but must have *immediate* attention. When containers are flooded the water should disappear in just a few minutes. There should be no trouble with drainage if plenty of $\frac{3}{4}$ " holes are placed in the bottom of the tub. Over these holes put $\frac{1}{4}$ " hardware cloth and then about one inch of roofing gravel. This usually insures proper drainage for a considerable time unless there is angle-worm trouble.

3. *Do not hesitate to prune.* Make every effort to get as much done as possible before growth starts. After growth starts a certain amount of pinching back will help to control the shape of the plant. Long, drooping, weak or old, knotty branches can be taken out any time. The center of large plants should be kept clear of short, twig-like branches that never will be capable of supporting a good flower and will only become shaded out eventually. Spraying is much more effective if this is done. After the new foliage has hardened down in August and Sep-

tember, further thinning may be done if quantity of blooms is not the first consideration. It is a quick and easy way to disbud. Some varieties tend to get very bushy in spots so there is not sufficient room for flowers to develop properly. Thinning in the fall months will insure larger and more perfect blooms.

4. *Use plant stakes to direct the growth of young plants up to 5 or 6 feet.* This is about the only way to insure a straight leader or central stem. Tie wire now comes coiled in cans. With a snap-cutter in one hand, a can of tie wire tied to your belt and a bundle of stakes in your other hand you are ready for business. You can be sure your plants will look much better when February and March roll around.

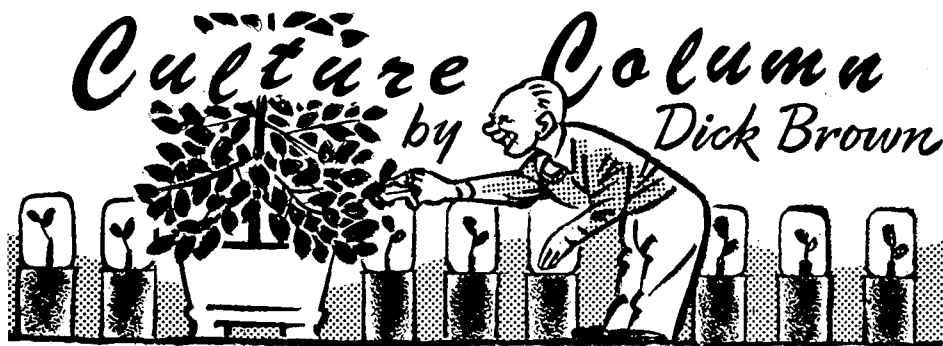
If you observe the above mentioned suggestions—do your watering regularly, fight the aphids with a choice assortment of chemicals, mulch your plants, do your disbudding on time, choose your new varieties with discrimination, harvest and plant your own seed, grow your own root stock for grafting purposes, you will find that you have plenty to do to take up your spare time, keep you active and alert, young in mind and body, and, just possibly, busy enough to "keep out of trouble," as our parents so wisely counseled us.

EDITORIAL NOTES

The avid camellia fan and reader is advised that he can arrange to join either or both of two overseas camellia societies, which publish interesting news and information regularly, at very small cost. The *Australian Camellia Research Society*, long one of the outstanding camellia organizations of the world, publishes an excellent illustrated Annual and a monthly Newsletter. You may join by remitting \$2.40 annual dues to Arthur C. Brown, Secretary, American Camellia Society, Box 2398, University Station, Gainesville, Fla., acting as American agent. The New Zealand section of the organization formerly known as the Australian and New Zealand Camellia Research Society, has recently been independently organized as the *New Zealand*

Camellia Society, with some 500 members. It now publishes a *Camellia Bulletin* three times per year, which is very much worthwhile. Those interested in joining should contact the Treasurer & Membership Secretary, J. E. Wylde, Box 28, Tirau, New Zealand, regarding dues for 1959-60.

In our last issue we had the pleasure of including an excellent article on judging, entitled "NOTES FROM CRITIQUE ON JUDGING CAMELLIAS," which was presumed to be the work of the informal committee responsible for the findings, inasmuch as the author's name was not given. We now find that Mr. Harold Dryden of San Marino, California, authored this article, for which he should receive full credit and we regret that the "by-line" did not appear with the article.



Notes on Hybrids in Sacramento

Experience with and observations of hybrids by the writer to date is somewhat limited due to the very few years we have grown them. For this reason, these remarks will be confined principally to their growth habits and performance in this area and this must, therefore, be regarded as a preliminary report.

The New Zealand hybrids, "Brian," "Phyl Doak" and "Barbara Clark," all promise to be exceptional. "Brian" is a very compact grower and a bit on the slow side as far as rapidity of growth is concerned. "Phyl Doak" is a very rapid grower and rather difficult to graft. It is reported that this variety is the most desirable of these three New Zealand introductions. It has not yet flowered for us but is said to have a large bloom. "Barbara Clark" is reported as being similar to "Brian" in the form of the flower but a different shade of color. It, too, is a good grower in that it is a fast growing, bushy variety.

No one can overlook "Donation" and its variegated counterpart, in the selection of hybrids. These two proven varieties are outstanding in their strong growth habit and good foliage, with fine branching, reminding one of a Christmas tree, and an explosive blooming habit which is very desirable.

"Citation" (originally known as "Williamsii Semi-double") is an excellent plant, compact, with many lateral branches and a normal rate of growth that makes it outstanding. The flowers of "Citation" are among the most beautiful of its type that I have seen.

"Margaret Waterhouse" is probably the fastest growing camellia I have ever known. Our plant is a three-year graft but is now more than nine feet tall! Needless to say, this variety requires severe pruning as it is inclined to be leggy due to its tremendous vertical growth. Being a *Saluenensis* hybrid, it crosses readily with the *reticulatas*.

"E. G. Waterhouse" is a more normal grower and performs admirably, producing good lateral branches and many flower buds. The leaves are more glossy and japonica-like than most of this type hybrid and it has very beautiful 3½" to 4" formal blooms, which hold on the bush for a long time and do not shatter.

"November Pink" is a very fast grower that also requires heavy pruning for best results. While not a spectacular flower, the color is excellent. The fact that it blooms early is also in its favor.

"J. C. Williams" is another fast grower. Given lots of sun and severe pruning, it will become quite bushy.

All of the above varieties, as well as "Elizabeth Rothschild," "Spanked Baby," "First Flush," and "Inamorata," do very well in the Sacramento area when given plenty of sunshine. They seem to enjoy the hot weather and considerable light. None of these hybrids has shown burnt foliage although exposed to sun that has caused the leaves of japonicas right alongside of them to burn. These hybrids do so well in this area that anyone wishing to add something unusual to the camellia collection would do well to acquire any of them that are available.

A FOND GOODBYE AND A WARM HELLO

It is a matter of some regret at times that the requirements of a publication having wide circulation are such that items of purely local interest must be kept to the minimum, because there are often occasions when the personal touch seems called for. Certainly, the annual "change of the guard" is one of those times, for only a person who has served as a chief officer or director of a camellia society knows how much plain hard work, thought and self-denial goes into each year spent in its service. It is regrettable that we cannot name each one of the retiring officers and directors and cite his particular contribution to his society's progress and welfare. However, what we have to say applies to all—you can fill in the names. Let us simply say to them as a group how much we appreciate their conscientious devotion to the cause, for this is, indeed, the truest exemplification of the amateur spirit.

Let us also welcome the following new officers and pledge to them our utmost cooperation during the current year:

Northern California Camellia Society

President.....O. L. Davis, Orinda
 Vice-President.....Jack Osegueda, Oakland
 Secretary.....Everett P. Tenney, Oakland
 Treasurer.....R. N. Swope, San Leandro
 Other Directors: L. P. Brooks, Concord; Arthur M. Patterson, Concord; Walter H. Peterson, Richmond

Pacific Camellia Society, Glendale, California

President.....Dan H. Roberts, San Fernando
 Vice-President.....Douglas G. Thompson, Los Angeles
 Secretary.....Mrs. Perry W. Clark, Los Angeles
 Treasurer.....Edward O. Morgan, Los Angeles

Camellia Society of Sacramento, Sacramento, California

President.....Erwin Nowak, Sacramento
 1st Vice-President.....Carroll Reiners, Sacramento
 2nd Vice-President.....Mrs. Marie Erwin, Sacramento
 Secretary.....Laura Toleman, Fair Oaks
 Corresponding Secretary.....Miss Beulah Capers, Rio Linda

Camellia Society of Santa Clara County, San Jose, California

President.....Allen S. Eckendorf, San Jose
 Vice-President.....Col. Fred W. Buechner, Saratoga
 Secretary & Treasurer.....John J. Mendoza, Santa Clara

HELP WANTED!

A number of our readers are interested in obtaining complete sets of *The Camellia Bulletin*, which is very gratifying except for the fact we are completely out of two fairly recent issues—Vol. 11, No. 1 (October, 1957, "Buddha" cover flower) and Vol. 11, No. 2 (January, 1958, "Tomorrow" cover flower).

Any of our readers who have one or

more copies of these issues in good condition which they do not wish to keep permanently will confer a great favor by mailing them to the Secretary, Everett P. Tenney, 4701 El Centro Ave., Oakland, California. Payment of 50 cents each, or credit of that amount to your next year's dues, will be made, according to your wishes.



It is becoming more and more necessary in Southern California to keep a watchful eye on the watering of camellias, especially in the summer months. This area had a little over five inches of rain the past season, hence it is necessary to "deep water" plants in the ground periodically. If in doubt as to the moisture content of your soil, it would be a good idea to dig a few test holes at various places in the garden to discover the true situation. This is especially advisable if you have camellias planted on a hillside, for the underlying sub-soil, rock ledges, etc., tend to distribute the subsoil moisture very unevenly. The most efficient method of watering is, of course, some type of overhead spraying where the water can be turned on and left for two or three hours.

Every camellia grower has noticed the tendency of soil in containers to sink lower and lower until, if nothing is done about it, the container is no more than a quarter full. Peat and humus rot and disappear, and the soil itself packs down, some of it going out through the holes in the bottom. Nobody has yet come up with a solution except that of re-potting which, ideally, should be done every two years.

It is definitely enervating for a camellia plant to be allowed to mature a heavy crop of seeds, and if superfluous seeds haven't been removed before, this is a good time to do it. In one instance, I overlooked a big seedling plant which was literally loaded with seed pods. These matured, but the strain on the plant was so great that it didn't bloom at all the next year.

Reticulatas made a bad record this spring in the matter of putting out their new growth. My place is shaded by live oaks which, in a normal spring, are infested with worms at the time of new foliage and which I have sprayed by a commercial spraying company. This year, however, the month of January was unusually warm; the worms hatched out under the unexpected heat, and since there were no new oak leaves to eat, most of them died. In early April when the new oak leaves appeared there were very few worms, hence I omitted the spraying job. But the few worms which were on hand concentrated on the fresh foliage of the reticulatas, completely stripped two large plants and severely damaged the others. There was practically no worm damage on the japonicas. Does this mean that fresh reticulata foliage is more attractive to worms? If so, it is a point against the species. Their foliage isn't too good anyway even under the best circumstances; this year it is a sad sight.

Dick Brown says in his "Culture Column" for April: "We have several camellias that are budded well but which have not bloomed even this late (April 1)." The past camellia season must have involved some temperature inversions (or something) which seriously upset certain camellia varieties; several of my largest plants which were well budded came through the entire season without opening a single flower.* Whatever the disturbing forces were, they must have been powerful indeed to bring about such drastic results.

*The same thing occurred at Lafayette, Calif. on one or two plants.—Ed.

