

Northern California Camellia Society, Inc.

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OFFICIAL BULLETIN

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Photograph by Herbert V. Mitchell

Emmy Balchen

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The Northern California Camellia Society, Inc. is a non-profit organization of camellia fanciers interested in the culture, propagation, and development of camellias. Meetings are held on the first Monday in each month from November to May inclusive, at 8 p.m., at the Chabot School Auditorium, Oakland. Membership is open to all those with a serious interest in the subject. Annual Dues \$5.00. Membership application blanks may be obtained from Judson K. Kirby, 7 Elliott Drive, Route 1, Concord, Calif. Address all matter regarding the Bulletin to the Editor. Report change of address to the Secretary.

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COVER FLOWER

The variety EMMY BALCHEN resembles Finlandia in form but is not so well known here as in Southern California. Although described as a vigorous, upright grower, your Editor has found it compact and rather slow in habit, blooming about midseason or a little later. The flower is handsome and fairly large.

EDITORIAL

The passage of time inevitably results in change, for it brings with it new circumstances which must be taken into account. Due to the increasing pressure of personal affairs, Mrs. Barlow W. S. Hollingshead, Editor of this BULLETIN for the past seven years and the person almost wholly responsible for its development into the present very creditable state, retired with completion of the April, 1954, issue. At the May 24, 1954, meeting of the new Board of Directors, the undersigned was formally appointed Mrs. Hollingshead's successor, at which time due recognition of the Society's deep appreciation, of which this is an informal expression, was given.

Insofar as your new Editor is concerned, this constitutes a venture into uncharted seas, the outcome of which may well depend upon good fortune — certainly upon your good wishes, understanding and forbearance. Let it be understood in the beginning that there may be technical mis-steps, for the writer has absolutely no academic training to fit him for the job. On the other hand, if years of first-hand experience in all phases of cultural procedure, a keen interest in the broader aspects of camellia enjoyment, and absolute devotion to the subject be any criterion, such a disadvantage may be outweighed. On that we base our hopes to continue the high standards which have heretofore been established.

It is inevitable that there be some changes, for this sort of undertaking, like a letter, reflects one's personality to some extent. It is much as if there were a new tenant in the same house, with all that implies. Perhaps the most significant change will be in the policy of the BULLETIN. Following approval by your Board of Directors, its scope has been widened and its policy will be broadened by including in the staff Associate Editors from our neighboring Societies to the north and south. We are extremely pleased to have join us in this capacity such outstanding camellia personalities as John D. Lawson, M.D., of Sacramento, and Alexander A. Payette, D.D.S., of Los Gatos, who are no strangers to our readers. These well-known and recognized authorities will act as contributors from time to time, keep us fully informed on matters of interest in their respective localities and, in general, act as associates in the fullest sense. Our many friends in the Sacramento and Santa Clara County areas will thus have facilities for keeping in a little closer touch with camellia news and events in this part of the country, while we shall enjoy the benefits that will come from a more intimate contact with the camellia world which surrounds us. It is our sincere hope and expectation that this collaboration will result in many other mutual advantages.

At the outset, there will be one further change in policy. We shall attempt to have the BULLETIN contain a greater number of articles written especially for publication, although continuing to report on the proceedings at our monthly membership meetings. To those able to attend these meetings the BULLETIN will thus appear somewhat less repetitive, while the members who cannot attend will find that the subject matter will be aimed a little more directly at them. Nevertheless, we shall continue the valuable function of acting as a recording vehicle for those subjects and discussions at our meetings which are deemed to be of sufficient general interest as to warrant verbatim recording.

It is only natural that the newcomer be ambitious. However, we must not lose sight of the fact that many valuable guideposts have heretofore been established. Merely to maintain past standards of excellence will be an accomplishment. If we aspire to add something, that is as it should be. On this note, then, we embark upon a new undertaking, realizing our own limitations and soliciting your helpful understanding and assistance.

DAVID L. FEATHERS, Editor.

A MESSAGE AND SOME NOTES

Calder W. Seibels, President, American Camellia Society,
Columbia, South Carolina

Greetings from the American Camellia Society to the Northern California Camellia Society and to its new Editor. It is a distinct pleasure and honor to contribute in this small way to Mr. Feathers' first effort. Other contributions will be submitted by the Secretary or Editor of the A.C.S. in the future if they are so desired.

Unfortunately, time, distance and expense makes it difficult for many of us in the Southeast to become personally acquainted with you Camellia enthusiasts on the West Coast. You who have contributed so much to Camellia culture as well as the introduction of the many varieties which we are eagerly seeking should be much more closely associated with us and we with you. Surely then it behooves the Camellia growers of both coasts to cooperate through their various publications, by means of questions from member to member, Editor to Editor, and Secretary to Secretary of all Camellia Societies regardless of their size or scope. This then is a sincere invitation to all Camellia growers to use the facilities of the American Camellia Society to whatever end they deem worthy.

Some notes from the Southeast may be of interest to you. The most exciting introduction in many years to most of us is Camellia Japonica **Mrs. D. W. Davis** from Seffner, Florida. It will not be available commercially until 1955. In the meantime it is being tested in the garden of an officer of the A.C.S. who lives much farther north and we will have reports on its hardiness during the winter 1954-55.

Mr. Dave Strother, owner of the famous Massee Lane Camellia Gardens at Fort Valley, Georgia, exhibited a truly magnificent red bloom of a seedling on November 21st at the Camellia Show of the South Carolina Society. Aside from its beauty and

size, the fact that it is an early bloomer makes it extremely interesting. It will be named for the lady who propagated it, **Mrs. Laura Walker**.

At the Columbia Garden Club Camellia Show Mr. Dave Strother did it again with one of the finest white blooms it has ever been our privilege to see. I hope that all of these thrive with you in Northern California, particularly **Mrs. D. W. Davis**, which reaches 8 inches—faint blush pink—incomplete double, semi-peony or semi-double, it is truly a great flower in any of its forms.

No doubt you have all heard of the outbreak of Petal Blight in Augusta, Georgia. This has affected seventeen of the most outstanding gardens in this Camellia-minded community. The Entomology Department of the State of Georgia is taking drastic and immediate steps toward eradication (not control). They are removing three inches of top soil in these gardens, burning all mulch and on January 1st will soak the ground to the depth of several inches with Fermate and continue this treatment through May.

The American Camellia Society is less interested in control than in complete eradication. To this end we believe that we have interested one of the most outstanding entomologists in the United States. We are not at this time able to divulge his name because of his prominence in other fields. The thesis for his Ph.D. was on the subject of **Sclerotinia** and his work on peach, pear and other similar affliction from "spore cups" has been his life's work and he is in a position to direct a large and able staff of technicians. I can also tell you that his approach to this problem is entirely a new one and completely different to any other known to this writer. We hope to give you a further

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INFLUENCE OF HEAT AND LIGHT ON CAMELLIAS

John D. Lawson, M.D., Sacramento, California

As a physician, I am accustomed to scientific work being subject to facts, controls and balances. Probably we are the most skeptical of the professions because so many methods of treatment have been brought out from time to time without adequate control only to be disproven under scientific conditions. Thus, as regards medicine, every procedure must be proven.

However, camellias are my avocation, and in that I am a rank amateur without any of the inhibitions which surround the professional. All of my considerations are of the amateur type in which experiences are set forth with the hope that another amateur may benefit thereby.

Many influences are contributory in the production of camellia plants and flowers, and most of them have been discussed at length. The pH of the soil, growing media, fertilization, disbudding and watering have all been considered in many, many articles. Probably the influences of heat and light have been neglected as regards the amateur's interest in his plants, and inasmuch as I have had an opportunity to observe some interesting phenomena in connection with these subjects, it might be worthwhile to set them down on paper.

Many of us have read the detailed works of Lammerts, Bonner and others regarding these influences, which papers were based on scientific, controlled experiments. In many instances they were able to bring seeds into flower in very short periods—less than a year and a half. They also describe the bud set, the flowering and general growth under varied conditions of heat and light. If we are to evaluate the effect of these two factors, we must consider them as to influence on growth, influence on buds and influence on flowers. The influence on growth should include studies of the rate of growth, the

amount of branching, and the color and density of foliage. As regards buds, we must consider the time of formation, amount of abscission, or bud drop, and the size of buds. As regards the flowers, we must denote the influence on form, color and size.

I have a modest greenhouse in which I have been able to conduct these uncontrolled experiments on seedlings for the past five years. The 1949 seedlings were kept in a temperature of 65° minimum and 105° maximum for a period of one year. They were then placed in the garden and subjected to the normal weather pattern of the area. The 1950 seedling crop was placed in the greenhouse with the added heat and light, and were not removed from it. In January of 1954, the 1950 seedlings were far ahead of the '49 seedlings with about twice as much growth and of much better shape, with more branching and better color. Three to four growth periods were apparent on the 1950 seedlings as compared with one on the '49, and in July of 1954 buds have appeared on some of the 1950 seedlings while none have appeared on the 1949 plants.

In a similar manner, the '51 and '52 seedlings are being kept in the greenhouse, and the '52 seedlings are quite advanced over the '49 seedlings which had been placed outside. It is too early to determine whether or not any of the '51 seedlings will bud for bloom this year.

In the past winter the camellias were given artificial light to average about eighteen hours a day. It is true that I have no fancy controls which turn on the lights while I sleep and turn them off at a precise time; however, they are allowed to run all night for a certain number of nights and then turned off for a period, so that the eighteen hour period was evened off. This has, undoubtedly, added to the growth and apparent health of

the plants, and also has an influence on the bud formation.

When the buds are set in these abnormal conditions, there will be a very heavy drop if they are allowed to remain in the additional heat and light, and as soon as quarter inch buds are apparent the plants must be removed from the greenhouse. Under high temperatures and high light the buds will nearly all drop. The remaining buds will result in a very poor flower of small size, abnormal form and poor color.

The camellia apparently must have a period of cold to allow for proper flower opening, and by juggling temperatures and light periods, it has been possible for growers to produce blooms four or five months off season. Work is being done on the project at various experimental stations at this time, and the results, while not complete, are most interesting.

I think it is worthwhile for those of you who have facilities for increased heat and increased light to experiment with your seedlings. Certainly we can bring them to bloom in a matter of two to three years instead of waiting for five to seven, which is the usual period. That will provide a better chance to cull out the poor plants and cut down the time necessary to bring out something that is satisfactory. It will also allow more room in the growing area which is generally all cluttered up with questionable seedlings. And further, it will speed up the time necessary to have sufficient material for propagation of the worthwhile plant as the growth is stimulated even to a greater extent than the flowering.

So much for greenhouse conditions. What about the ordinary camellia culture in the shade or under lath?

In the best camellia areas of California, nature takes good care of us insofar as heat is concerned. Possibly in the San Francisco area and in the Eureka region where high temperatures are very rare, certain types of

camellias will not produce optimum bloom. However, on the whole, most of the California areas have relatively hot summers and reasonably cool winters, and the problem is not one of controlling temperature.

Light, however, is a different subject. I had a Pink Perfection planted against a fence in the full shade with little light. It is a beautiful plant, but in two years never set a bud. I moved it into partial shade, and it now is well budded. The requirements of different camellias as to light are somewhat variable, and it is quite possible to grow many of them in full sun without injury to the plants, and with the production of good bloom. The optimum amount of sunlight is difficult to state dogmatically. I have three sections of lath which transmit 65, 50 and 40% of sunlight. Except for a few varieties, the 65% sunlight appears to be optimum on bud set and flower. A few of the tender camellias get leaf burn under the extreme exposure, but in none of the plants which received the 40% sunlight are the buds as profuse as those subjected to the greater amount of sun. Possibly the 50% lath is the most advisable as it will not cut down too much on the budding and the leaf burn will be minimized.

In the matter of leaf burn, unless a large number of leaves are affected and burned to a crisp, no damage has been done to the plant or to the flowers. In fact the flowers will probably be superior. It may, however, take the plant a year to refoliate properly.

The influence of heat and light on blooms we have all experienced. Especially when the Show is next week and comes it a hot spell which takes all of the turgor out of our blooms or causes them to open so rapidly that they do not size up as we aware of that influence. Only under greenhouse conditions, where temperatures can be controlled, is it possible to bring out the most beautiful blooms with perfect color and

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MULCHING

Roy T. Thompson, Glendale, California

Quite frequently the business of mulching takes on the attributes of a controversial problem, especially if certain members of the family group have a strong sense of neatness and order and desire to keep every leaf and twig scrupulously swept up from the ground. To such persons it seems downright dirty and slovenly to pile leaves and twigs around the base of camellia plants and thus give a dishevelled look to the otherwise neat lawn or garden. Of course, if the controversy grows too hot, the mulcher can always retreat to such ground covers as peat moss, or even pine needles. Come to think of it, it would be a good idea (in case trouble is foreseen) to begin with peat, then, when no one is watching, gradually change over to pine needles, and, after all eyes have been thoroughly accustomed to these, introduce little by little, whatever leaves or other mulching materials one may have access to. Thus the unsightly disorder of piled up leaves comes into being very gradually and is scarcely noticed.

Speaking of neat mulches, a common one used in some sections of the South is crushed peanut shells, and in others bagasse, the solid matter from crushed sugar cane. In the rather hot, dry climate of Ramona, California, wood shavings are successfully used. And in the humid, rainy areas like Mobile, Alabama, no ground covers are necessary. In areas such as that of Los Angeles County where the humidity is relatively low, a mulch becomes a most useful

means of conserving moisture, especially during the hot months.

The conservation of moisture is perhaps the most important contribution of the mulching practice, especially in soils that tend to be sandy, and in areas like Los Angeles County where winter rainfall is seldom sufficient in itself for growing plants, every bit of rainfall that can be saved is a valuable gain, for rainwater does far more for camellias than tap-water. Rains in this area are very frequently followed by strong winds which quickly dry up surface moisture, but a ground mulch saves most of the newly fallen rain.

Also, a mulch which slowly decomposes, furnishes a steady supply of food the year round and furnishes it at a point where the surface roots of camellias can most easily pick it up. The late R. J. Wilmot pointed out* that camellias are poor producers of vitamin B₁, a substance regarded as necessary for adequate root development, but that a year-round mulch will provide the necessary vitamins.

A mulch, too, will aid in the maintenance of more uniform ground temperatures, keeping the soil cooler in hot weather and warmer in cold weather. This is especially true if the mulch be a thick one.

Another advantage of mulching is that the rotting vegetative matter supplies a measure of acidity to the soil, perhaps just the right amount for camellias, for in Japanese and other oriental localities where camellias are native, they grow best under trees which furnish a natural supply of fallen leaves.

An additional value of a ground mulch, but one which has not been much stressed, is that it encourages the presence of certain bugs and

worms which work in the soil just beneath the mulch and keep it aerated and open. Angleworms thrive under a mulch, and here in Los Angeles County the sow-bugs are highly beneficial in that they thoroughly work the soil beneath a mulch and keep its texture ideal for camellias.

Oak leaves and pine needles are the most readily available materials for mulching here. Oak leaves tend to rot very rapidly and will have to be frequently renewed, but this process, of course, furnishes a steady supply of food. Pine needles rot more slowly and, if put on thickly enough, will last about a year. Rotting pine needles are perhaps more acid than other mulches, if the blackness of the soil which they produce is any criterion. However, almost any kind of leaves or vegetation which is swept up beneath trees can be used. Lawn cuttings are not advised when they are fresh and green, for they will form an impenetrable mat of rotting matter through which air cannot read-

ily pass; besides they generate far too much heat within a short period of time after they begin to rot. If other mulches are not available, lawn cuttings are satisfactory if they are allowed first to dry out thoroughly, like hay, before being applied as mulch.

Sometimes a thick mulch is a disadvantage in Southern California when rainfall is light for at such times the rain does not penetrate the cover of leaves and so does the camellias no good. Another possible disadvantage is that a year-round mulch tends to make an accumulation of matter and soil which eventually covers the crown of a camellia. In some sections mulches are put on during the hot season and removed at the beginning of cool weather. If the mulch is left on the year round, care should be used to keep the crown free.

*Wilmot, R. J., "Values of a Mulch," *American Camellia Yearbook*, 1946, pp. 57-58.

(Reprinted from *Camellia Notes*, published June, 1953, by Pacific Camellia Society.)

Message and Notes—

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and most encouraging report in the not too distant future.

I am proud to be a member of your Society. Be sure that anything which I may contribute to the welfare of the Northern California Camellia Society will be gladly offered.

—Calder W. Seibels

NEW OFFICERS AND DIRECTORS

The members have chosen the following to serve as the Board of Directors for the year ending in April, 1955, and they in turn have elected officers as indicated:

Wallace H. Brown (President)
Clement A. Roberts (Vice-President)
Walter N. Powell (Treasurer)
Judson K. Kirby (Secretary)
Mrs. G. Myron Grismore
Clifton W. Lattin
Thurston Skei

PREVIEW

The Cultural Experimentation Committee, under the capable leadership of Harold L. Paige, is now engaged in the preparation of a very comprehensive survey of the merits of several hundred varieties of camellia japonica. The object is to develop a fairly large list of varieties which perform best under cultural conditions applicable to the general area with which this Society is identified. The Committee has been very active and a number of meetings were held this summer, with further meetings scheduled, at the new home of the Paiges near Lafayette. A great amount of data is being secured and collated and, in the opinion of one pretty close to the picture, something of considerable value to the membership is in the making.

HUMUS IN CAMELLIA CULTURE

Major Gordon W. Richmond, M.D., Richmond, California

It has been well established that all plants and especially broad-leaved evergreens thrive best in the presence of abundant humus. Most favorite planting soil recipes call for large proportions of this scarce ingredient. Peat moss, because of its availability is almost universally used, but it is probably the least valuable as humus. It is practically sterile, and contains very little material of value to the plant. The main function of peat is to separate the particles of heavy soil and to acidify them so that they will granulate. If used in too great amount it merely produces a soggy medium which is not a happy environment for the plant roots. Oak-leaf mold is also widely used, and if reasonably free from dirt, stones, sticks, etc., is very valuable. The main objection which has been raised to the oak-leaf mold available from near the San Francisco Bay Area is the possibility that it may contain oak-root fungus, which disease has caused heavy casualties in some of our finest collections. Incidentally, a very fine (but expensive) oak-leaf mold is available from near Placerville, California, which is probably completely free from this fungus, because of the dry character of the climate of the Sierra foothills where it is collected.

There is some factor, as yet unidentified, contained in humus that is essential for the continued well-being of plants. No chemical has yet been found which will take its place. All of us have seen container-grown plants thrive very well until they become pot-bound severely, and then begin to fail. On removing the container, the humus which was originally in the potting soil is completely gone and has been replaced by roots. No amount or kind of commercial fertilizer will rejuvenate the plant; however, repotting with fresh soil containing abundant humus will start it off on a new healthy career. Plants

may be kept in the same size container for many years by periodically removing a band of soil around the outside of the root-ball and repotting in the same container with the space replaced with fresh soil. In square containers, the corners can be cut off and the root-ball given a quarter-turn in the pot, and new soil packed into the corners. The plants do not seem to suffer at all if this is done regularly.

The tree in the forest which for centuries has never had any cultivation or application of fertilizer is as fresh and vigorous as it was as a young tree. Why is this? Primarily because there is a deep cover of humus, sometimes many feet in thickness at its base. This has come from the tree itself in the form of discarded leaves, twigs and bark, as well as from any grasses or other vegetation growing under it or nearby. This material rots down and becomes humus to be absorbed by the roots and carried throughout the tree only to be dropped again, completing the cycle. This is one reason for our practice of mulching, so widely used by camellia fanciers. Most yard plants and trees suffer from the excessively neat and tidy habits of gardeners by being deprived of their natural humus.

A continuous supply of humus may be had by composting. Compost is usually thought of as something one gets from a pile of garden debris that has been allowed to accumulate for a year or more, and that never amounts to very much. This is a very inefficient way of making it, however. Usually because of such haphazard method, it falls by the wayside. The following is a well-tried method for making excellent humus very rapidly although, as with all good things, it takes a fair amount of hard work. But what is work to camellia fans but a labor of love?

In a cool, out-of-the-way area of the

yard, but one which is readily accessible, preferably to a truck or trailer, construct three contiguous bins. These may be of any rot-resistant wood or concrete block. The size is not important; however, the work involved increases markedly with the size of the bins. For a large garden, a good size would be 6 feet long by 6 feet wide by 4 feet high for bin No. 1; 6'x3'x4' for bins Nos. 2 and 3. For small gardens 4'x4'x4' for No. 1; and 4'x2'x4' for Nos. 2 and 3. Bins smaller than this will be difficult to work in and will not properly digest the material. The bins are constructed on the bare ground. Sturdy corner posts are set in holes and pounded in tight or concreted. Provision is made for removing easily the fronts of each bin. They can be arranged with the fronts on the same side or with the fronts of Nos. 2 and 3 on the opposite side from that of No. 1, depending on the space available.

Bin No. 1 is the starting point. Enough material should be gathered beforehand so that the bin can be filled all at one time. The ingredients are:

1. Any soft organic material, the more varied the better. Weeds, prunings, leaves, grass clippings, (scattered thinly), table scraps, peelings, rinds, coffee grounds, entrails, nut hulls (not shells), grain hulls, etc. Everything that one can think of which is not woody. (Sawdust can be used if not in too great amount.)

2. Manure, preferably horse, and as fresh as possible. This contains fodder and bedding well soaked with nitrogen-rich urine.

3. Materials such as gypsum, marble dust, rock phosphate powder, soil, peat, etc.

The weeds, etc. are placed in the bottom of Bin No. 1 to a depth of 6-12 inches being sure to thoroughly wet them down with the garden hose. Then a layer of manure, the thickness depending on how much of this material you have been able to obtain—

if possible, a thickness of from 2-5 inches. This is also thoroughly wet down after it is placed in the bin. Over this layer is sprinkled the ingredients as in item 3 above. This is also thoroughly wet down.

The above process is repeated, layer upon layer, until either the bin is full or the supply of ingredients is exhausted. (You are exhausted, too, by this time, so better take a blow and have some ice-cold liquid refreshment.) A layer of manure should be reserved for use on top, and the whole covered with a 4-inch layer of finished compost. (Use soil the first time.)

Now all you have to do is watch it cook. An iron bar plunged into the center will be an indicator of the temperature. After 4 or 5 days the temperature will begin to rise and may, after another week, reach 175° or 180° F. This kills off all the harmful bacteria and fungi and also sprouts and then kills all weed seeds.

After about 6 weeks the temperature will have fallen considerably and it is time to turn it. It will have diminished to about half its original volume, hence the smaller size of the other two bins. The front of the bin is removed and the material is cut down vertically and layered out in No. 2 bin horizontally. A fair amount of chopping is necessary to get it out and it is usually necessary to wet it down again as it is turned. Finally the job is done and it is also covered with 4 inches of finished compost. Meanwhile, another supply of ingredients has been collected, and you are ready to start Bin No. 1 again (probably not until the next day, however).

After 4 weeks, Bin No. 2 has gone through another cycle of heating and shrinking and is ready to be turned. The front is removed and the same process is repeated—cutting the contents down vertically and layering it out horizontally in Bin No. 3. It will probably need further wetting. This

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INTRODUCTION TO THE CAMELLIA (Part I)

By David L. Feathers, Lafayette, California

Editor's Note—It is with some embarrassment that the first installment of a paper which the writer prepared some time ago, and which was read as a fill-in at an early 1954 meeting of this Society, is presented in this issue. The principal excuse for it is, perhaps, the close relationship between an article on the natural habitat of the camellia to the subject matter of other articles appearing in this issue, plus the fact that the material had already been set in type.

Having started this thing, the presumption is that the remainder of it (also already set in type) must, for reasons of economy and continuity, appear at some future date. When that will be will depend upon the availability of more suitable material. Meanwhile, it will be held in abeyance—to be used in much the same manner as the paper was read originally—as a sort of stop-gap.

Natural Environment

Imagine yourself in the midst of a semi-tropical forest. The vegetation, though lush, is open rather than impenetrable. Around you on all sides are eye-catching plants, from a few feet to more than twenty feet in height, garbed in the most verdant of Nature's apparel. You observe many with leaves so glossy they reflect the filtered sunlight slanting through the giant trees overhead. Recognized readily are the wild azalea and rhododendron about to bloom, whose spreading rather than upright habit of growth occasionally sends an ambitious branch toward the sky, where spots of light come unhindered through the canopy overhead. But about you, growing in small groves or thickets, is a plant that is more neat than the others, adorned with the most beautiful of foliage having the appearance of just having been polished and bearing many, many blossoms. Some of these handsome plants have flowers that are bright red, some pink, some white—others an admixture of these colors, all seeming to have an open center with a golden tuft. The sun is getting higher in the heavens and, with its added warmth, you detect a delicate, spicy fragrance borne on the first gentle zephyr. It is the subtle per-

fume of the camellia, whose pollen, from the many thousand blossoms, permeates the air. Looking ahead, your eyes now rest on one, similar to the others, but this is a thirty-foot tree with a foot-thick trunk, seemingly bearing as many small, red blooms as it has leaves.

The earth beneath your feet cannot be seen, for you are standing on Nature's soft carpet of decaying leaves and twigs. Here and there a fallen limb or trunk returns to soil, sheltering a wild lily which pokes up its head, thus to display its tiny bells for you to see. You kick your foot into the mulch and note the earth below—a brownish cast where rot is incomplete, then blackish, loose soil which breaks up in hand. You look more closely and, in each handful, find a few small stones. It is completely moist but, press it all you will, it does not lump and as you drop it to the ground it breaks apart again.

You climb upon a knoll, that you may better see in panorama what setting there is here from the standpoint of topography. A steep hill rises to the north, from whose jagged cliffs must come those stones you noted mixed with soil, while to the south a valley gently slopes away, its contours outlined by the billowing tops of trees which, fed by moisture draining down the hill, have grown to greatness and thus shelter all the lesser vegetation that you first observed.

The wind now rises briskly and, though gently warm, escorts large, fleecy clouds which temporarily mask the sun. You feel the first large drops of moisture tap your cheek and then it comes to mind that this must be a land of generous rain, which would explain the verdance and the polished leaves. You think: "No gardener sets foot here, but Nature tends

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Humus in Camellia Culture—

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move is fairly easy, and can be done at the same time as turning Bin No. 3.

After 4 weeks in Bin No. 3 with only a slightly above normal temperature, the first batch is ready to use. After 14 weeks the material has lost its form and odor, and now smells clean and sweet. It can be used in potting soil, as a mulch, or it may be just added to the flower beds and worked into the soil.

Using this method one may, if he is willing to do the work, and on schedule, thereafter obtain a full bin of compost every 6 weeks. This might seem to be an over-abundance, but the soil never seems to get too much. There is always some place to use it, for this is the material the plants need for healthy growth. I have grown several camellias and a bed of begonias for several years in pure compost, no soil, and they are thriving and healthy with excellent blooms. Actually, the only reason soil is necessary, besides the minerals plants obtain from it, is to hold up the plant, as it has been demonstrated that plants can be grown in a water-chemical medium (hydroponics).

One note of caution as to other manures used. Old cow manure is good. Chicken, rabbit and sheep manures must be added sparingly and with caution. They are concentrated, and if used in excess will result in a foul-smelling gluey mess which is very difficult to break down and may have to be buried. The same caution applies to grass clippings. Use them, but sprinkle lightly over the other layers.

The results you will derive from the finished product will be satisfying and well worth the effort expended in its making.

Editor's Note—We are extremely fortunate to have such authoritative articles on Mulching and the making and use of Humus in connection with Camellia culture, such as Mr. Thompson and Maj. Richmond have contributed, which are both timely and complementary.

In the making of compost out of vegetable matter, one of the absolute essentials to rapid decomposition is the presence of adequate nitrogen, which facilitates the work of the bacteria responsible for the breaking down, or digestion, of the material. In Maj. Richmond's method, the manure supplies this necessary ingredient in natural form. It is, however, quite possible to bring about very rapid decomposition by the use of other agents. A light sprinkling of lettuce meal between the layers has caused the temperature of the material to rise to 130° in three days, by actual test, and to rise to 160-180° within a week. The heat which the compost generates is, of course, evidence of the action that is taking place. It is believed, although not as yet tested by the writer, that alfalfa meal would also serve this purpose. The addition of sulphate of ammonia, or equivalent, would serve to expedite the bacterial action by fortifying the relatively low nitrogen-containing meals. It is said that an acidifier such as horticultural sulphur also aids the decomposition, while further serving to make the compost more acid.

Aside from the nutritional value of the humus, it serves to keep the undersoil surface open and thus receptive to moisture, as this fibrous material will not form a film of mud when watered, which seals the pores of the soil and prevents saturation. Possibly the only valid objection to mulching is its receptiveness to seed germination, often resulting in undesired weeds and, worst of all, fungus growths.

Heat and Light—

(Continued from Page 6)

formation. Even the time of opening may be regulated to a certain extent.

It may be necessary, in order to have proper bud set and bloom, to move a camellia from a spot which is too shady for that type of plant to a more exposed location. Or the opposite may be necessary where the foliage of a plant is such that it will not withstand long light periods. Camellias are individuals and each may respond differently under identical culture.

This is just the tale of an amateur camellia hobbyist who has gone off the deep end and experimented with various factors without any control and without the least semblance of science. But then most of you who read this are of the same ilk, and maybe it will prove to you that others are as unscientific as you feel you are.

Introduction to the Camellia—Part I

(Continued from Page 11)

this place and by her means of watering overhead from time to time, then shielding out the sun with cloud and tree and covering the ground with leaf and twig, provides all food and drink as needed here." The wind, though riotous above, is greatly subdued by the trees, to whose shelter you have fled.

You watch the raindrops, heavy now, but still no moisture stands, for here the leafy carpet breaks their fall and drains them through, while there a tiny rivulet drains off the rest so that no mud is anywhere about. And now the shower passes by and, with returning sun, all evidence of rain is gone. But note the freshened air—free from all dust and smoke—and, too, the clean, bright leaves which, in reflection of their thanks, now shine renewed with vigor, just as you, likewise refreshed, go on your way.

Origin

That is an imaginative visit to the Home of the Camellia, as it exists in the mind of the writer, based on the limited accounts that are available. The locale would perhaps be somewhere in the vicinity of Kunming, whence came the twenty-odd new and wonderful varieties of **Camellia reticulata** which are just now becoming available to camellia enthusiasts in this country. It would lie in the shelter of the Himalaya Mountains—that peerless range of gigantic peaks whose everlasting snow and cloud cover must explain why this region has been the most prolific source of varied ornamental flora in the world. This is the heart of the Camellia Belt, which ranges along coastal China and the adjacent islands, including Japan and Formosa, from the cold region of Korea in the north to semi-tropical Indo-China in the south, comprising an area which would average temperate in climate but having relatively heavy

rainfall—perhaps seventy inches annually. This is the land of the tea of commerce — **Camellia thea** as it is known botanically—and which, with its first cousin, **Camellia sasanqua**—also used for beverage purposes to some extent — is closely related to those nonpareil members of the family, **Camellia japonica** and **Camellia reticulata**, who, by the beauty of their adornment, more than compensate for their lack of utility.

In this close relationship of the "Camellia" (*japonica*) and tea lies an interesting story, for it is said that the introduction of the camellia to Europe, while not strictly accidental, was certainly not intentional if the account is true. It appears that, about the year 1700, a British trading company had commissioned one of its sea captains to obtain specimens of the commercial tea plant on one of his voyages to China, with the object of endeavoring to grow tea successfully in Europe and thus avoid the hazardous, time-consuming and expensive process of importing it from so far away. But the wily Chinese, when asked to furnish tea plants, sensing what the outcome might be to their lucrative trade, substituted specimens of the ornamental camellia instead. It is reputed that, in this strange and interesting manner, the introduction of **Camellia japonica** to England first came about, from where it eventually became distributed throughout Europe, America and Australia. Whether or not the story is actually true is immaterial here, but it does serve to colorfully illustrate the close relationship between the tea of commerce and the "camellia" with which we are concerned.

Botanical Classification

The Camellia belongs to that group of plants known as broad-leaf evergreens, of which it is probably the most handsome. For the benefit of those who may be unacquainted with the botanical system of plant classification, a brief explanation

would be helpful in properly placing the camellia with its relatives. In this system the overall grouping is called the FAMILY, which is divided into GENERA, each GENUS then being sub-divided into SPECIES, and each SPECIES further divided into VARIETIES. The "family tree" method of illustrating the exact relationship of persons is perhaps the simplest means of describing this system. The trunk of the tree would represent the FAMILY, the main forks sub-dividing the trunk would be the GENERA, the subsidiary branches of these forks would be the SPECIES and the twigs of these branches would represent the VARIETIES.

The family of plants to which the Camellia belongs is called **Theaceae**. This family is sub-divided into some 16 genera of which **Camellia sinensis** (meaning "Chinese camellia") is the only genus of major importance ornamentally. Among the better known genera, besides the Camellia, are: Cleyera, Eurya, Gordonia, Hartia, Schima, Stewartia, Ternstroemia and Tutcheria. The genus **Camellia sinensis** embraces some 45 different species, including the commercial tea plant.

Kinds of Camellia

Of this relatively large number of Camellia species, there are only a few having florescence sufficiently attractive as to have merited widespread cultivation to date. In fact, there are only three really important groups, measured by the yardstick of popularity. In the order of importance, these are **Camellia japonica**, **Camellia sasanqua** and **Camellia reticulata**. Among other species rapidly becoming better known, and which could well be considered as having ornamental value, are: *C. saluenensis*, *C. maliflora*, *C. oleifera*, *C. cuspidata* and two inter-specific hybrids — the fine new strain resulting from a cross of the species *japonica* and *saluenensis*, known as the J. C. Williams hybrids (named after the originator)

and the excellent hybrid "Vernalis" (Dawn) resulting from *japonica* x *sasanqua* and a pretty even blend of the two species. Of the rest, now under very limited cultivation and regarded as of value primarily for hybridizing purposes or some characteristic other than beauty of flower, might be mentioned *C. hongkongensis* and *C. taliensis*.

Camellia Japonica

By far the most important species from the standpoint of popularity and overall superiority is **C. japonica**, of which there are several thousand named varieties. This is the "camellia" known to most people and it is justly deserving of its pre-eminent position because it comes about as close to being the perfect ornamental plant, in climate ranges where it can be grown, as exists. What makes the **japonica** superior to both **sasanqua** and **reticulata** is its greater range, all-around excellence and uniformity of growth habit. This group comprises all the known camellia flower forms, from the simple 5-petaled single flower to the most completely double of camellias, while the color range is the widest of all, from the chalkiest white through blush and all shades of pink, rose, red and variegations of all these colors in differing patterns. The *japonica* species also embraces, partly by reason of its much greater number of varieties, by far the longest blooming season of any in the genus, covering a period of at least six months—approximately from late fall to late spring. Thus japonicas afford a choice of varieties from which one may make a selection providing continuous bloom, encompassing the entire period in which the garden is barest. This group also possesses much superior foliage, being noted for its leaves so glossy as almost to appear to have been waxed. Furthermore this species provides for the best flowers for cutting and personal adornment due to their diversity, formality and good keeping qualities.

The size of the blooms varies from the miniature, or boutonniere, type, some of which are under 2 inches in diameter, to magnificent semi-double flowers up to about 6 inches. The japonica ultimately will attain a height of approximately 30 feet, with an almost equal spread, under favorable conditions. At the Edinger place, near Hood, California, there are three varieties of japonica, growing for the past 85 years without particular care, ranging from 27 to 31 feet in height and from 22 to 38 feet in spread, the trunks of these trees varying in diameter from 10 inches to about 12½ inches.

Camellia sasanqua

In naming the second most important species of camellia, irrespective of which of the two — *sasanqua* or *reticulata*—were selected there would be some dissenting opinion. This is perhaps as it should be, because the purposes to which the two species are put likewise differs and personal preference unconsciously will enter into the matter of choice. I have chosen *sasanqua*, primarily because it has such an overwhelmingly larger number of varieties (numbering into the hundreds) and colors, thus giving it greater potential uses. While the individual blooms are far inferior to those of the *reticulata*, nevertheless *sasanqua* compensates for a characteristic lack of size by a mass effect that cannot be surpassed in any of the genera. This is truly the "azalea" of the camellia world! Some varieties, such as SNOW ON THE MOUNTAIN, for example, are literally covered with bloom and, when one gazes on a good specimen of this plant in flower, with the ground beneath it carpeted with snow-white petals, it is easily understood where it got its name. Furthermore, in this group there is the advantage inherent in an early-blooming habit. *Sasanquas* begin to come in with the chrysanthemums and, like that splendid flower, help to fill the void which

occurs in the garden with the Fall season. This makes them ideal for use in conjunction with a planting of japonicas, which they supplement. On the other hand, the blooming period of the *reticulata* coincides almost exactly with that of japonica, with which it is thus competitive rather than complementary.

The finer leaf structure and rather bushier habit of the *sasanqua* makes some varieties highly desirable as hedge material of the most distinctive sort. The fact that they bloom early makes *sasanquas* adaptable to use out in the open in this manner, as most varieties are through blooming before the first frosts. They are also slightly more sun-tolerant than japonicas and, as wall subjects where they will receive some protection, *sasanquas* probably will stand, as a class, more cold weather than either japonicas or *reticulatas*. The *sasanqua* group is also very useful employed as a sort of ground-cover on hillsides or sloping banks, particularly if some shade is available. Then, too, there are certain varieties which respond beautifully to training and pruning, such as for espaliering purposes. In general, it might truthfully be said that the potentialities of the *sasanqua* are just beginning to be discovered, particularly where informal beauty is desired. The group is a very versatile one and is deserving of more widespread attention, which it appears about to receive judging by the interest that has recently been exhibited. However, it has only limited value for cut-flower purposes, inasmuch as the blooms shatter rather readily and do not have good keeping qualities, generally speaking. The maximum height which the *sasanqua* attains is about 20 feet.

Camellia reticulata

This species, of which some 20 varieties are now under cultivation in the United States, might well be called the "butterfly" of the camellia world. It is certainly the most spec-

tacular and the largest-flowered of all camellias, some blooms of the original and most commonly grown variety, CAPTAIN RAWES, purportedly having reached a diameter of 9 inches! This species is, however, the most tender of the three and, so far as is now known, most varieties have the disadvantage of a naturally awkward or leggy habit of growth. The foliage, while superior to that of the sasanqua, cannot match that of the japonica as it is generally of a duller green and also lacks its glossiness. Reticulata is also a rather sparse bloomer, comparatively speaking, although this is compensated for to some extent by the massiveness of the individual flowers. All except the one variety mentioned and one or two wild forms with inferior florescence are of comparatively recent (5 years ago) introduction into this country, so that it is not yet possible to state categorically that all are alike in growth habit and relative tenderness. Until it is proven otherwise, however, they should be so regarded. That does not mean that reticulatas are unsuitable for out-of-doors culture everywhere, only that they should not be expected to tolerate as much cold and heat as japonicas and sasanquas. The reticulata is primarily the specimen type of camellia, desirable for highlighting that particular spot in the garden, or for use as a potted plant subject. Though the color range is somewhat limited, it has been broadened considerably by the new introductions now coming on the market. The range is red through the deeper shades of pink, including a few having white variegation. The form of the blooms is generally the open, semi-double type, with prominent stamens, many flowers having petals with a tendency to flute and to stand rather vertical, or "rabbit-eared," although there is at least one or two full doubles among the newer introductions. Some of the colors have a suggestion of irides-

cence in the sunlight.

Old Chinese records mention as many as 72 varieties of reticulata, but we do not yet appear to have a blush pink or white, nor variegations of these colors. In temple gardens near Kunming, China, old trees of the species are reputed to have attained an age of over 300 years and a height of 50 feet! This would seem to establish that, where conditions are suitable, reticulata will probably outgrow any other species of camellia. The word "reticulata" means "netted" or "veined", undoubtedly referring to the leaf structure in which the veining has the peculiar characteristic of being raised, and is thus more prominent than in any other of the ornamental camellias.

Growth Characteristics

From the foregoing descriptions, it will have been noted that there are relatively wide differences in growth and blooming habits as between the several species. This is likewise true in comparing individual varieties of the same species, particularly japonica, although to a lesser extent. However, the basic cultural requirements being the same for all camellias, these differences are of secondary rather than primary importance; for example, all camellias are relatively slow-growing although they differ materially in shape, some being round, some tall and columnar, some bush-like, while others have a rather rambling habit of growth. Thus there will inevitably arise the important question as to the adaptability of a given variety, or species, to a given situation, where a permanent planting is desired. The proper procedure would be to inquire of the nurseryman as to the suitability of that particular camellia for the proposed planting site. This is the safest way. However, it may be of general interest to have some idea of what to expect in the way of growth from the average camellia.

(to be continued)