

The BEGONIAN

Devoted to the Sheltered Gardens

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Pictures for the Begonian

By THE EDITOR

● Just because we have been showing some rather large pictures of plants in our magazine it is no reason to deter those who have only small—but good—kodak pictures of their plants from sending them in. We ask our readers periodically to send to the writer accounts of the growing of pet shade plants and if possible to take photographs of the plants in question. All we ask is that they be in full focus, well lighted and clearly depicted then printed in glossy finish. We will do the rest. Our publishers follow the editor's directions as to size only if the detail is good enough to show with clarity the points which will make the plant more identifiable than it would be if kept small in size. The American Begonia Society spends considerable money in these cuts to enable members to derive more benefit from them.

Pictures are great allies. We are just beginning to realize the value of good photographs, especially since we cannot be the kind of artist Mrs. Alice Clark proves for us each month. Now that film is again available, get out your camera and learn to make your plants TALK. With them send us your story about the plants. If you are doing color photography it would be splendid if two or three copies of each subject is taken, one of which could be sent to the National A.B.S., for the lectures that may be organized. For the time being The Begonian is limited to the black and white. If you do not succeed the first time—"TRY AGAIN JOHNNY."

Remember: The Begonia Show in San Diego — and the Begonia and Shade Plant Show in Los Angeles. **Be Preparing.**

BEGONIAS IN FEBRUARY

By BESSIE R. BUXTON,
Peabody, Mass.

• If you like to grow *begonias* from seed, start them as soon as may be. Mix equal parts of sand, leaf mold and light soil, sift well and firm down in shallow clay pans. Water well a few hours before planting the seed. Mix the seed with a teaspoonful of sand and scatter very thinly on the moist soil. Then sprinkle very lightly with the soil mixture or with clear sand, firm only gently, cover with a pane of glass and set in a warm place in light, but not in the sun. Moisture will gather on the glass during the day.

Turn the glass over at night. If the pan looks dry, set it in a dish of lukewarm water until the soil is moist, but guard against overwatering. The baby plants will appear in about two weeks. Transplant in clusters to another pan after the first pair of leaves is well formed, handling very carefully. The second transplanting, when the plants are large enough to stand separation, may follow in about a month. A handy tool for transplanting tiny seedlings is a match. Shave thin on one end and cut a V notch to slip under the little plant. Continue watering from the bottom until the plants are large enough to be potted. Use only rain water for seedlings.

The last of this month is also the time to start the *tuberous begonias* into growth. Set the tubers in a box of peat and sand, covering them lightly, and water carefully for they rot easily. Cover the box with a paper and set in a warm place, with bottom heat if possible. In about two weeks the tubers may be potted in four inch pots in a mixture of one part leaf mold, two parts loam, one part sand and one part well rotted manure. If you wish to increase your stock of a favorite color, take cuttings when the new growth is about four inches high. Allow at least two buds on the cutting above the point where you cut. It is important to get the base of the cutting healed quickly. This may be done by dipping it in powdered charcoal or sulphur. Set the cutting so that two joints are below the surface of the rooting medium (equal parts of sand and peat) and use a box deep enough so that a piece of glass may be put over the top. A Wardian case or an aquarium is excellent for this purpose.

Healthy begonias will benefit by feeding this month—liquid manure the color of weak tea once a week. Lacking this, there are many chemical fertilizers that are good if used according to directions.

While cold weather continues, do not use

A Handy Method of Storing Small Garden Seeds

By H. B. ROONEY
San Francisco, Calif.

• I would like to call attention to a method of storing small seeds. This is a use of empty gelatin capsules such as you obtain for a few cents from any druggist. The ordinary capsules run in size from 000 down to the tiniest. Larger sizes up to almost any size may be obtained specially if you wish.

By using the 000 size one has compactness and at the same time the convenience of sufficient space to number each capsule. I use Higgins India ink for this purpose. This numbering enables one to identify the seeds in each capsule.

Should you wish further to protect the seeds, the capsules may be sealed with a bit of scotch tape.

very cold water on your plants. Either let the water stand until it is room temperature, or add warm water. Do not water plants on sub-zero days if you can avoid it. Newspapers between the plants and the glass keep out a good deal of cold, but on severe nights,

(Continued on Page 24)

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BOB ANDERSON

1415 Echo Park Ave. Los Angeles (26)

ROUND ROBIN NEWS

By FRANCES DOWNING, Bowie, Texas

• There is a FERN group which has been waiting to start flying for some time but is held back for the reason that we lack a Director. The leader we thought would assume the responsibility finds it an impossible activity just now. Will someone please come to the fore and offer to take this all important post? It must be someone who loves and knows ferns well and yet be willing to guide others.

If anyone wants to know how Round Robins are conducted, it will be my pleasure to explain the procedure if the inquiry is directed to me.

The HYBRIDIZING GROUP also awaits a DIRECTOR as does the SEED SOWING ROBIN. With the impetus given the A.B.S. SEED FUND through renewed sources and reopened mail avenues, we expect a great deal of activity in these fields. One does not have to be expert in the subject to direct a Round Robin, but it helps. In any case each one learns a great deal and it is much worth while. Please let me hear from you promptly.

The TRADING POST still booms. Already letters are being received from grateful "traders." One man writes, "Most everyone wants to give more in return for the amount received. The plants and seed I received were well packed, labeled correctly and of very fine quality." Good news which portends a happy future for would-be traders.

The following Round Robins have been asked for: "Fancy Leaved Caladiums," "Annuals and Perennials for the Shady Border," and "Hardy Violets."

BEGONIA BOOK OFF PRESS

• Mrs. Bessie Buxton's new book, "Begonias and How to Grow Them," has just arrived, but too late for a review to be given this month. We advise you to get in touch with your dealer or Librarian of the A.B.S., Mrs. John W. Crowder whose address is now 9838 Easton Dr., Beverly Hills, California . . . for your copy. The price is \$2.25 per copy, plus postage.

Please send name, address of your good speakers with information on subjects (and fees, if any) to Murray Hawkins, 609 So. Grand Ave., Los Angeles, Calif.

BEGONIAS IN FEBRUARY

(Continued from Page 23)

—if the temperature drops below ten above zero, the plants should be removed from the sills at sundown, and not replaced until the sun is high and the temperature rises.

Adventures in Improving Begonias

By W. D. HOLLEY

University of New Hampshire, Durham, New Hampshire

PART III

Foliage Color

Four F_1 populations have been obtained by crossing Carmen, a dark red leafed variety on various green leafed varieties. The dark foliage color is dominant, the F_1 being as dark in color as its parent. Considerable sterility has been encountered with the F_1 plants, but some 150 seedlings have been raised to maturity from four different hybrids. Approximately 50 per cent of the F_2 progeny have dark foliage, 25 per cent are intermediate, that is have some color but not as dark as Carmen, and 25 per cent are green. When the variegated Begonia semperflorens variety Calla were crossed with two different green leafed varieties, the F_1 's were green. In one case, the F_2 population segregated into 164 green and 24 mottled. In another case there were 247 green, 90 mottled, and 13 Calla or variegated. When self-pollinated two mottled plants from the first F_2 generation produced 106 mottled, 4 Calla and 41 mottled, no Calla respectively. When self-pollinated the Calla begonia produces green and Calla plants in a ratio of about one to one, together with varying numbers of Albino seedlings. Since this variegation in Calla begonia often causes Albino seedling in its progeny, the counts may be subject to considerable error. The Calla formation is inherited and it can be combined with other characters such as flower color and doubleness.

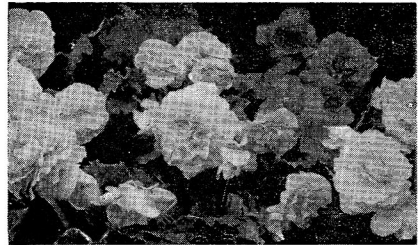
Plant Habits

In the process of this work it was noted that the populations of begonias quite often segregated from plant habit, there being two rather distinct forms noted, namely, upright and well-branched. Plants pure for these characters were crossed, the resulting F_1 being upright. A backcross of the F_1 on the branched or recessive gave 25 upright and 28 branched or approximately 50-50. A different backcross made at a later date produced 15 upright and 15 branched. A plant pure for the upright character when crossed with an F_1 upright, in other words one carrying 50 per cent upright and 50 per cent branched, produced all upright progeny. Self-pollination of two branched selections produced all branched progeny. From these data branching is recessive to upright with the relationship mono-genic.

Conclusion

I realize that very little value will come from this work with begonias other than perhaps a few clonal varieties and of these we have had hundreds that were good. It does show that we can produce by planned plant breeding methods any type of semperflorens begonia that we want so far as plant habit, flower color, foliage color or doubleness of flowers. By planned plant breeding I mean selective crossing, backcrossing and selection.

Perhaps this work will show further that similar results can be obtained with any other plants. We cross to get variations and then select the variant which we like or which fits our purpose and if this variant is not quite good enough we backcross it onto an individual which has the character lacking and continue growing generations by self-pollinating until we are able to select the plant which we want. Systematic plant breeding can obtain almost any variety we desire but it takes quite a lot of time and some rather careful attention to details. This perhaps above all is the reason why some of the really big plant breeding problems must be solved by State and Federal Experiment Stations.



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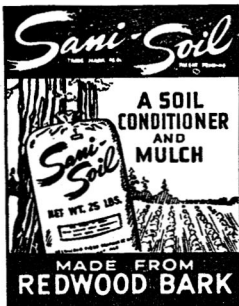
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BEGONIA BRANCHES HEADQUARTERS FOR MANY ARTS

• The *East Bay Branch* December meeting was excuse for some fine gestures. Mr. Haberland donated several plants he had grown from seed obtained from SEED FUND of the A.B.S. The hostess, Mrs. C. F. Jensen who excels in art of fruit-cake making donated a beauty for sale . . . and the President, Dr. Fred Davis, presented a picture of a Fuchsia he had drawn as a door prize. Most Branches celebrated the spirit of Christmas with the exchange of plants which is an unselfish and healthy activity if the donor is very careful to give only truly healthy plants. We hear from the *Santa Barbara Branch*, that besides growing wonderfully fine begonias, Mrs. Frey is also an excellent cookie maker. This Branch is in action again and much can be expected from the members as many are of the expert caliber. Too bad these outstanding plantspeople are usually too busy to write much if at all for the benefit of the less informed. We wish that note-makers would help us out in sending to the Editor what pearls of wisdom are disseminated during meetings and garden visits. Time is so short and we want to learn all we can NOW so as to succeed with growing our plants without too many unhappy experiences.

Theodosia Burr Shepherd Branch Officers

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New Begonia Name Proposed

By HELEN K. KRAUSS

• The new name *Begonia semperflorens-cultorum* is here proposed for that large group, commonly grown as "wax" begonias, which had its inception in crosses of *B. semperflorens* and *B. Schmidtiana* in 1878. The hybrids of these crosses were successively crossed with *B. Roezli*; also as *B. atropurpurea* varieties; with derivatives of *B. fuchsioides*; and with *B. gracilis* and *B. nitida*. Following is a chronological outline of the development of this group.

1. *B. semperflorens* crossed with *B. Schmidtiana* in 1878 gave rise to intermediate and more compact forms.

2. Progeny of the preceding were crossed with each other. (Except for the initial cross, *B. semperflorens* was not used again in the development of the group.)

3. *B. Roezli* was crossed with these early hybrid forms in 1881. (These crosses produced an increased color-range of the flowers.)

4. *B. atropurpurea*, the first bronzy-red-leaved mutants, appeared in France, 1890.

5. *B. atropurpurea* varieties were crossed with each other and with *B. Schmidtiana* in 1891. (The latter crosses provided a wider range of lower growing forms.)

6. *B. fuchsioides* crossed with hybrid forms of the preceding in 1891 produced smaller and still smoother foliage.

7. *B. gracilis* was bred into the multiple-hybrid group in Germany, 1894.

8. *B. nitida* was bred into the group in France, 1900, from which our current double-flowered "Bijou de Jardin" descended.

9. Pompon-like double flowers were introduced in Sweden, 1934, from crosses of *B. "semperflorens-cultorum"* with *B. florbunda*, a variety of *B. fuchsioides*.

10. "Calla Lily," a white-leaved mutant, appeared in America about 1935. Similar ones arose in various nurseries voluntarily. These have single flowers.

11. "Calla Lily" crossed with "Bijou de Jardin" by two different California hybridists about 1938-39 resulted in white-leaved mutants with deep-red double flowers.

The following description covers the group:

B. semperflorens-cultorum. Bushy; stems succulent; leaves ovate to broad-ovate, not as pointed nor as assymetric as those of *B. semperflorens*, glossy, usually smooth, occasionally sparsely hairy, green, bronzy-red to dark mahogany-red, variegated green and white; flowers in small axillary clusters, single and double, white to deep red. This group is exceedingly floriferous and blooms almost continuously.

Wynnewood, Pa.

By courtesy The New York Botanical Garden "Journal."

ABOUT DDT

By courtesy: *The Bulletin, The Department of Agriculture, State of California, Vol. XXXIII, October, November, December, 1944, No. 4.*

DDT (*dichloro diphenyl trichloroethane*). DDT was initially developed before the war but the greatest knowledge of it was obtained as published during 1944. It was first used in Switzerland about 1939 for protecting fabrics from clothes-moths, then to control Colorado potato beetle and houseflies, but its most spectacular use has been in medical entomology and public health. The DDT louse powder used by the Army averted a typhus fever epidemic in Naples and has been referred to as the greatest medical entomological advance during the war. Another use in military work is for malarial mosquito control as an oil spray against adult mosquitoes and larvae in ponds. Even jungle areas otherwise impossible to handle have been treated by airplane. DDT is quite simply

synthesized from monochlorobenzene and chloral hydrate in the presence of sulphuric acid.

Being an organic chemical, DDT decomposes somewhat readily and decomposition products are less toxic. It is not as toxic to human beings and domestic animals as one would expect from the presence of five chlorine atoms and two benzene rings, probably because of insolubility in water. DDT is effective against a wide range of insect pests yet, because of its selectivity, there are some important insect pests against which it appears ineffective. On the other hand, a drawback to DDT may be that it is not quite selective enough and in some cases has killed beneficial parasites on development of which we have spent many years. DDT insecticides no doubt will also find commercial utilization in certain fields of civilian household pest control. It is hazardous on foodstuffs to be consumed by man or other animals, and should not be used on such commodities.

DIRECTOR'S ROUND ROBIN

By BESSIE BUXTON, Peabody, Mass.

• The first flight of the Director's Robin has passed me, full of enthusiastic begonia news. About 30 states, from Maine to California and south to Florida are represented by these Directors. A Massachusetts Director has shelves on her window sills for her beloved begonias, and sets small pots of them on the upper sashes. The rest are on tables and plant stands. After spending the summer on a screened porch, they are brought in early, before the fires are started, as there is less leaf dropping under these conditions. A New York member keeps her house at 65°, but reports that her plants die of rot. This might be caused by overwatering. Under such cool growing conditions give less water, unless the plants get much sun. A Kansas City member says the city water kills her plants. Evidently the water is chlorinated, as it is in most cities. She should save rain water, or draw the city water in a bucket and let it stand—outdoors if possible—for 24 hours before using. A California member living at 2000 feet altitude finds that thick stemmed and procumbent types grow best in her dry climate, and the fibrous are easier to grow than tuberous, rex or semperflorens. Her favorite soil mixture is one quarter each, gravel or sand, peatmoss, leaf mold and rotted manure.

The Florida Director—lucky woman!—can grow her begonias out doors the year around, although occasionally there are frosts which necessitate protection with Spanish moss (*Tillandsia usneoides*) from the trees. She finds the Rex more tender than the semperflorens, which bloom well all the year. Some are planted in garden soil, some in boxes, some in leaf mold and some in garden soil with top dressings of Vigoro. The double semperflorens need plenty of space—they resent crowded conditions, and flatly refuse to grow indoors. She reported that a woman in southern Florida uses a 3 inch mulch of sawdust on her garden to conserve moisture, but finds that in her garden, sawdust kills the plants. Apparently the sawdust is made from different kinds of trees in these two localities, and its chemical content differs.

The Texas Director has grown begonias in Kansas, Alabama and Texas, and finds that begonia growing was easiest in Kansas. In Alabama, the summers are hot and moist, the air very humid. The plants need plenty of space, with good ventilation and perfect

drainage. The fierce sunlight is more than any begonia can stand, and shade is necessary. When it rained heavily, the plants had to be moved to a porch, or decay would start. Kansas grown begonias were not as large as those grown in Alabama, but were strong and healthy. A vine covered arbor gave good protection, and the plants were sprayed twice daily, keeping the air cool and moist. In all 3 states, the begonias were grown indoors in winter. In Texas, she finds it well to put geraniums, shrimp plant (*Beloperone guttata*) and other tall sun lovers next to the glass, so the begonias get filtered sunlight.

A southern California Director says her Robin members discuss a chosen subject in each round of the letters, bringing out definite information. One of her Minnesota members wrote that she mulches her garden with well-rotted sawdust, combined with oak leaf mold, and her plants thrive. It is interesting to compare this experience with those from Florida, and speculate on the kind of trees from which the sawdust was made. A Colorado member reports that the Rex Lavender Glow needs less water than most rexes. In this Robin, 3 different ways of rooting are recommended: in water, in a 3-inch pan of damp sand, and in sphagnum moss. Excellent results are reported from each method. A Nebraska member writes, "When I pulled the bean vines from the garden, I noticed the root tubercles, which store nitrogen. Would this soil be good to use for begonias?" Who can answer this?

A South Dakota member complains that B. Templini is not a sturdy grower. Reports from all over the country corroborate this. It is a sport of B. phyllomaniaca, and in many places has reverted to the species. Rarely now does one find a large healthy specimen. Apparently it is on its way out and may soon be only a lovely memory. I'm glad I have a photograph of a large plant which I grew long ago. A Missouri member covers her clay pots with heavy tinfoil, to conserve moisture. She plants her seeds in a small square aquarium, with 2 inches of drainage material covered with 2 inches of sphagnum moss, and topped with 2 inches of good soil. The aquarium is covered with a glass sheet, a crack being left open for ventilation. A Massachusetts grower contributes this soil formula: 3 pints oak leaf mold,

(Continued on Page 38)

Fuchsiarians Ruthless With Shears

By OLIVER KEHRLEIN

Author of "*Fuchsia, Ballerina of the Garden*," to appear shortly.

• Legend has it that George Washington hacked down his father's cherry tree in February and fuchsiarians have followed suit ever since. This is the month when all experts slash their way through their lath houses and bushes, cutting everything to naked sticks, and their erstwhile gorgeous collections take on the appearance of a devastated area. The exact date? Right after the last frost and your guess is as good as mine.

Low bushes should be cut back to the lowest set of dormant buds on the bottom branches. Higher bushes should be pruned at various elevations; one main stem low down, another midway and others higher up, so that each will form a separate crown to fill the whole bush from top to bottom. All side branches on climbers can be cut back to the main framework and on espaliers all that is to be left should be the original design. On standards, the crown is cut back until it looks like a barren coat rack. For hanging pot-plants, prune some stems a couple of inches from the dirt, the next series at the edge of the pot and the last irregularly, part way down the sides of the pot. This system will insure a full growth over the

top and down in a tumbling cascade.

With all pruning done, stakes, lattices and other supports will be visible and can be made firm and secure. Rotten ones can be replaced and all of them can be repainted. Check all ties and it now will become apparent that the raffia fastenings have rotted. Use old electric light cord, it lasts indefinitely, and allows for the growth of the stems.

This is the best time to cultivate and work in a new supply of manure, leaf mold and other humus. You cannot hurt the dormant roots by digging now. Before laying down the spade, replace all of the labels lest you forget which belongs to which. While digging, watch for nests of insect eggs, larvae and pupae. Destroy them. Also spray the plants, soil and surrounding woodwork with rotenone, pyrethrum or nicotine sulphate to kill any dormant pests.

This is also transplanting time. Overcrowded beds can be thinned out and the extra plants moved into new locations. Colors which swore at each other can now be shifted. Plants which were unhappy in too much shade or sun can be changed.

Nomenclature and Directory of Unusual Plants Stressed

• Two innovations—a nomenclature session and directory of unusual plants—marked the meeting of the Theodosia Burr Shepherd branch of the American Begonia society, the first held under the leadership of Clarence A. Hall, 1946 president, and his newly selected corps of officers.

The nomenclature session is to be a regular feature of future meetings and will be conducted by Arthur Longmire of Carpinteria, noted authority, who was also main speaker. He will undertake to classify any and all plants brought to him by society members who are uncertain as to their proper name and type.

The second innovation directory of unusual plants in the region, is being compiled together with invitations for members to view them.

"Plant Propagation" was Longmire's topic. He described its origin in China, telling in detail about branch and seed propagation, and explaining such plant phenomena as mutations, hybrids and mongrels. Illustrating his

talk with drawings, he gave instructions on how to make various grafts, such as saddle, cleft, veneer and whip types. He also described methods of growing from root cuttings and stem and leaf cuttings.

Making recommendations in regard to proper soil for planting, the speaker stressed the use of loose soil containing some sand. After his address, Longmire answered questions from the group and then opened the classifying session.

President Hall introduced the society's 1946 appointed chairmen. They are: refreshments, Mrs. Arthur Hodkins; plant sales, Durward Bunnell; good cheer, Mrs. Clyde Snodgrass; hospitality, Mrs. J. J. Streets; publicity, Mrs. Newton Nance; program, Herman Weitz; yearbook, Mrs. Walter Knecht; hall chairmen, Mrs. H. R. Morris and Mrs. Longmire.

Refreshments were served at a table decorated with silver-trimmed acacia boughs. Mrs. Hodkins was general chairman while January chairman Mrs. O. R. Rounds had Mrs. J. A. Kellogg, Mrs. P. S. Jewett and Mrs. Frank Long on her committee.

B. INCARNATA

By ALICE M. CLARK, San Diego, Calif.

• Bessie Buxton used a large photograph of *B. incarnata* for the jacket cover of the first edition of "Begonias, and How to Grow Them." I keep heavy cellophane over my copy to preserve this splendid illustration of a truly floriferous fibrous begonia. I hope her second edition—which I await, eagerly—features that same fine print.

It really seems foolish to try to paint such a fluffy, frilly plant as *B. incarnata*. When I approach it, I sympathize with the portrait painters in the days of Marie Antoinette, who spent more time on the wigs and ruffles of costumes than on the faces of their subjects. So must I take four days to depict the fluted, twisted and curled edges of the leaves and the multiplicity of flowers and buds to do justice to my lady, *B. incarnata*, who probably got her name for her flesh-colored blooms.

The literature on this month's BEGONIA is so voluminous that it is hard to attempt a digest. The species, *B. incarnata*, Link and Otto, was introduced from Mexico to Berlin, where it flowered in 1829. A similar plant in Edinburgh was pictured and described by Graham, in *Curtis Botanical Magazine*, as *B. Insignis*, of unknown origin.

Die Begonien lists a *B. incarnata* that is different in being taller, with white spots on the young leaves and longer inflorescences. Chevalier notes the hairs on the leaf surfaces, which are the same size as ours, but his, too, has longer flower stems (5 to 7 inches) and the bloom is 1 to 1½ inches. In size, under 3 feet, his bush corresponds with those we have grown. Les Begonias also mentions *B. i. grandiflora* as an American plant with larger flowers. The summary of our subject in N. Y. B. G. booklet is not specific enough in stating dimensions to help us. Eva Gray's pamphlet says that *incarnata* is 2 to 3 feet tall, with flowers of light rose in small clusters, while *i. grandiflora* is an improved variety with red flowers.

Mrs. Buxton describes the species *incarnata* as tall and shrubby, with small pale pink flowers. She explained how Charles Saunders, in 1908, improved the plant so that its leaves were 6 inches long and the rose-pink flowers were nearly 2 inches across.

The plant of my sketch is a cutting of a begonia purchased from Rosecroft several years ago as *B. i. var. Saundersi*. Perhaps it has reverted during its life in my garden, but it certainly does not answer Bessie Buxton's description,—and I can find no others in my

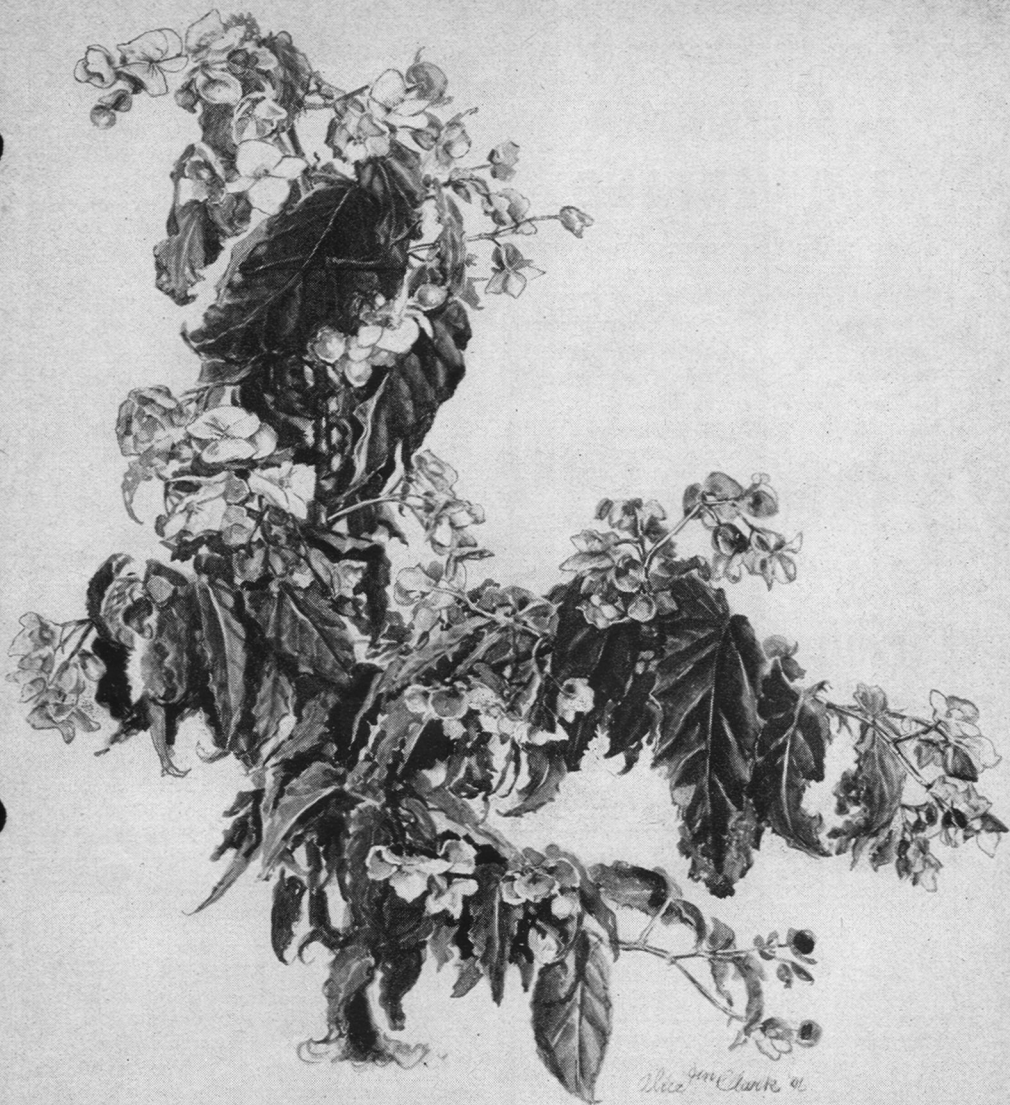
vicinity for comparison, which is the reason that I have not used the above varietal name with my drawing, though I am sure it is an improved type. *B. i. var. grandiflora* was mentioned in *American Florist* as early as 1888. Since the name itself implies that it had larger flowers, we are inclined to question the use of Saunders' name unless his plant, perfected ten years later, was much superior to *grandiflora*. Until its description has been compared with that in the A. F., this point cannot be settled.

The painting of *B. incarnata* shows only one stalk of a plant 1½ feet tall, selected to show the characteristic drooping habit of the branches, which is most attractive in the full bush. The main stems, of which there are many, are upright, half-an-inch in diameter, round and brownish green, flecked with white. They are swollen at the joints which are wider apart at the base than near the top. The stipules are small and slender and soon dry to an inconspicuous dark brown. Each stalk supports long branches that are rather brittle and should be staked and pinched early.

The thin leaves, on petioles an inch long and faintly grooved, are fluted and scalloped and somewhat lobed. Their main ribs are off-center and the leaf curves like a sickle. When young, the foliage is sharply cut and fringed with red hairs which show less as it grows out. The leaf surface is a shining light green, irregularly marked with indistinct rough gray hairs, in slight swellings. The veins are lighter and slightly raised. Underneath, the color is a duller, softer green. Branches start from the leaf axils which are alternate on the stem.

The greenish-red peduncle rises from the terminal of each of the many branches (which makes it most floriferous), and extends 2 to 3 inches before dividing. The tiny tip leaf of the branch is lost among the heavy flowers, which probably accounts for the drooping tendency. There are eight or more in a cluster. Usually a large male bloom on an inch-long pedicel centers the first division of the flower stem. Later development is uneven. Each side has a wide-open female with two more males coming on, while another seed bearer is hidden in a tiny bract, which only encases the pistillate flowers. On my plant, which has been outside in temperature as low as 35° F., the buds and exterior petals of bright rose make the bush very gay. In the house the color becomes paler.

(Continued on Page 31)



B. INCARNATA

(Continued from Page 30)

The staminate flower has 4 petals. The 2 outer ones are a squat heart-shape, half-an-inch wide. They enclose two slender elliptic petals. The inside is all pale pink around the nice golden tuft of stamen. The pistillate bloom consists of 5 even petals, slightly deeper in color, centered by insignificant green-

ish yellow stigma, short and untwisted. The half-inch wide ovary is greenish-pink in the shade and a cherry-red on top. One of the three wings is longer and sharper.

B. incarnata has been long used for hybridizing. One of the loveliest results, made in 1885 and still in existence, is x *B. Fanny*

(Continued on Page 32)

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CAMELLIA SHOW

• The San Francisco Camellia Show, which was started as an experiment last year and which was so well received, will be repeated, by popular request, on Wednesday and Thursday, March 13th and 14th, 1946.

Displays of specimen bloom collections and a competition in "arrangements" will demonstrate how camellias can be used in home decorations. Ribbons will be awarded in all classes. Special efforts will be made to have potted plants on display.

Growers of all classes are invited to exhibit their blooms. Any inquiries may be addressed to Alfred Stettler, Chairman, Room 2, City Hall, San Francisco, California. The show will be held in the ROTUNDA of the City Hall.

GRAFTING CAMELLIAS

• The best time to graft CAMELLIAS is through February and March or right after blooming.

Cut plants to one or one and a half inches above the ground, preferably of last year's growth. Treat the scion like a cutting, fit it into the cleft of the understock the while matching the cambium layer, then wrap without using wax. Protect with an inverted bottle or jar over it all. The soil around the plant should be kept moist at all times. This is the tried old method by which experienced gardeners seldom fail. Get your grafters to demonstrate methods. Try them out through practice. It is fascinating.

B. INCARNATA

(Continued from Page 31)

Giron, a cross with a tuberous species. It is difficult to raise as the latter blood makes it want to be dormant in winter where the incarnata strain encourages the beautiful bright red flowers.

Chevalier suggests starting B. i. anew each year. That is good advice. A large 3-foot plant that I used to show in the winter to encourage more people to grow it, sickened and passed out the next spring, due to nematodes. It has taken me two years to obtain the much smaller plants I have now.

I can never understand why B. incarnata isn't raised as regularly as a semperflorens. Its heavy bloom through the winter months is something to marvel at. In the winter, when Nature has reverted to elemental lines in tree and shrub, in shades of gray and white, what indoor plant can give the uplift of B. incarnata, improved, with its cascading waves of light green leaves, tipped and crested with rosy-pink foam?

The Soil Colloids as Related to Soil Fertility

By DR. W. C. DRUMMOND

Hollywood, California

PART IV

COLLOIDS

Size of Colloids

To give one some idea of the size of a molecule, the following may be illustrative. When a drop of water is magnified to the size of the earth, a molecule would appear on the surface the size of an orange. When it is said, then, that colloids are just a little larger than the molecule, we can understand they are quite small. Both molecules and colloids vary in size. The unit of measure is the micron which is expressed as 1μ , .001 M.M., or one micron is equal to the one thousandth of a millimeter; and a millimeter is the one thousandth part of a meter, a meter is 39.27 inches, and a meter is the millionth part of the circumference of the earth at the equator. Now, colloids vary in size from 1μ to .001 of a micron. (See page 102, Textbook Plant Physiology by Maximov.)

Visibility and Shape of Colloids

The colloid easily passes through a filter paper, but not a parchment or animal membrane. They are too large to be acted on by osmosis. They are invisible individually to the eye or by ultramicroscope, yet under certain conditions they reflect light which is visible by the ultramicroscope. Their shape is demonstrated by the light they reflect. When struck by the continuously moving molecule, a movement called the Brownian movement, and at the same time in a very strong light, they reflect a light as a mirror would. A round object would reflect a continuous light, but not as a flat object would. From this action we can say a colloid has an irregularly flat shape.

Chemical Terms Explained

What is meant when we speak of a CATION, an ANION, an ION, or an Element, might be roughly explained, yet incompletely this way: when we add a solute, as, common salt (sodium chloride NaCl) to a solvent, as pure water, the crystals of salt dissolve in the water, that is, the salt molecules separate from each other, resulting in a true solution which is said to be homogeneous. It might be mentioned here that a colloidal suspension is called heterogeneous because of the adherence of swarms of various molecules to the micelle. Next we would find in our solution that some of these molecules have also broken up, so to speak, into their component parts, sodium (Na^+) and chloride (Cl^-). These Na^+ and Cl^- are called ions. The Na^+ , carrying a positive electric charge,

is called a cation, while the Cl^- , carrying a negative electric charge, an anion. These ions do unite with themselves as Cl_2 , and are called an element or a molecule of chlorine. The Cl^- cannot exist alone, while the Cl_2 molecule can.

Electrolysis and Electrolytic Dissociation

Pure water resists the passage of an electric current through it, but when we add the teaspoonful of salt to the glass of water, then an electric current readily passes through it. The salt is called an *electrolyte*, the process, electrolysis, and when the molecule of common salt breaks up into Na^+ and Cl^- , the phenomena is called *electrolytic dissociation*. In this dissociation we find the positive ions (Na^+) traveling toward the *negative electrode*, called the cathode, while the Cl^- travels to the positive electrode, called an anode. In the case of sodium chloride this is not altogether true as the sodium reacts with water, forming sodium hydroxide (NaOH , or common lye), while the extra H, of the water (H_2O) used, goes to the negative pole instead of the sodium. (Read page 245, Gen. Chem., Richardson, 1927.)

Electrolytic dissociation is continually taking place in the soil. It is by this action that new arrangements of the ions are formed into new chemicals, and ions of sulphate (SO_4), nitric (NO_3), and ammonia (NH_3) can be adsorbed by the plants. By the same process bases are absorbed by the soil colloids.

Colloidal Sols, Gels and Coagulation

As already stated, we find colloids everywhere in nature, typical examples around the home are egg albumin, gelatine and starch. These are organic colloids. The cells which make up the human body are colloidal. The cell wall is said to be a GEL, while the protoplasm, the internal parts of the cell, is called a SOL. Colloids may be said to be of a gelatinous or of an albuminous nature, they are so small, colloids coagulate, and most of our soil colloids are said to be coagulated. The colloidal mixture, before coagulation is called a sol. When the coagulation or precipitation takes place it is called a gel. Milk contains casein, a colloid, when the milk sugar turns to lactic acid, by bacterial action, the lactic acid combines with the casein to neutralize the casein, then coagulation takes place, this is the souring or clabbering of milk. The same thing takes place in our

(Continued on Page 36)

TOLMIEA menziesi The Pick-a-back-Plant RE ADVENTITIOUS BUDS ON SHADE PLANTS

By MARIA WILKES, Los Angeles, Calif.

• While contemplating the picture of Begonia Rex Emerald Isle by Mr. Hartwell in the August issue of THE BEGONIAN, the writer found herself enumerating the other plants which multiply their kind through formation of plantlets on their own leaves. Plants which have a way of "bringing them forth alive" so to speak (at least they take care of them until their progeny are ready to fend for themselves) . . . of which

Tolmiea menziesi (Tolmee'a men-zee-sigh) is an outstanding example, are very attractive and curious. This plant, commonly called Pick-a-back-plant is native to the woods and forests of Mendocino County, California, to the Puget Sound in Oregon, indeed, Mr. Jepson says it is found north as far as Alaska. That means it can stand quite a lot of cold and wind as it grows along the coast.

The Pick-a-back-plant is not grown for its feathery spikes of small blooms which are somewhat reminiscent of the so-called strawberry begonia (*Saxifraga sarmentosa* or *Aaronsbeard*) but for the delightfully fresh-looking, almost heart-shaped leaves, irregularly slightly lobed leaves which produce little plants at the apex of the petiole of the mature leaves through all of the summer, nourishing them until several leaves are formed though still attached to the mother leaf and the grandmother plant. As the stems lengthen other plants are produced until by a series of "monkey-chain" the plantlets reach the ground, the babies set roots and thus go along on their own.

If the plant is in a pot too high from the earth for this natural procedure to manifest itself, it will continue to extend its growth until the whole mass may reach the proportion shown in the accompanying picture taken in the garden of Mr. Robert Bezones of Los Angeles, California. This particular specimen was exhibited at the Inglewood Dahlia Show in 1945 and has made added growth since then. It now measures about 30 inches through, and a few inches taller than 30 inches in height. This plant is now two years old, is planted in pure leafmold in a 12-inch pot. Mr. Bezones has given it material support, however, by feeding this beautiful hanging basket with likwid-gro twice a month and has refrained from taking plantlets off for propagation purposes. It is remarkable how each leaf cradles its little plant and the youngster lives on happily though held from making its own way in life.

In the lathhouse, where the soil is moist and loamy, it does not take long to form a considerable colony with potential families in the making all around. Dr. Tolmie, for whom it was named, may not have guessed how happy this little plant would be in the house, south and north, east and west, in the lathhouse or under trees anywhere in the coolness of the shade and not necessarily near its own sea-breezes. Attractive as ground cover.

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KEEPING UP WITH DDT

From The Science News Letter we learn that Drs. Paul Lauger and Paul Miller admit mass attacks on harmful insects with DDT would be devastating to beneficial insects and other cold blooded forms of life that DDT can even be used on dug-in insect enemies such as grubs and larvae of Japanese beetle tho' comparatively ineffective on their cousins the grubs that turn out to be June bugs or May beetles but, and this is good news, that the ground-dwelling roundworm or nematode succumbs to the much publicized and potent DDT. The roundworm causes root rot, a disease afflicting many plants.

For some of the mass attacks, DDT has been found a hundred times more effective than the arsenical poisons hitherto in use. For instance, 15 pounds of DDT per acre will be as effective against Japanese beetle larvae as 1500 pounds of a standard arsenic compound applied to the same area.



Photo by W. L. Frost, Los Angeles

Tolmiea menziesii in a hanging basket, grown under the shade of trees by Robert Bezones, member Inglewood Branch.

There is no excuse for any apartment, no matter how small, being without this pretty, rather furry-leaved plant which offers not only a nice touch of life but always a subject of discussion as soon as the baby plants are formed.

The greenish-purple flowers on a seven-to-nine-inch stem should really be cut off unless one desires to do some propagation from seed or some hybridizing with the hope of bringing forth some other variations of this single species of the family Saxifragaceae.

Look around you and note other plants which are given to propagate by adventitious buds. One notable plant is *Begonia Templini*. A well-known group of plants with this characteristic is one division of so-called *Kalanchoes* (Crassulaceae), more specifically named *Bryophyllums*, of which there are many varieties. The very name means "sprouting-leaf."

The easy culture and still simpler natural propagation make it possible to always have a small plant on hand to pass on to a visitor—which is a gesture with far-reaching results, both to the donor and the recipient.



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THE SOIL COLLOIDS AS RELATED TO SOIL FERTILITY

(Continued from Page 33)

soil. The soil colloids being acid, are neutralized by the base elements, then there is a coagulation of the soil colloid. (This is a very important reaction.) Sometimes coagulating forms a jelly as the action of pectin, a colloid, in the jelling of fruit juice.

The soil colloid body or core is called an **ACIDOID**, a micelle or a nucleus, and as already stated this micelle is acid attracting positive or base element and repelling acid or negative micelles.

Summary of Functions

The functions of the soil colloids then are: First, by their attraction of the cations (Base elements), they act as a store house for these elements). It keeps them from leaching. This attracting and releasing of these elements is called Base exchange. (Explained in the October, 1945, issue of **THE BEGONIAN**.)

Second, they have to do with flocculation, that all important property of soil conditioning. Third, along with hydrogen release, they to a large extent have to do with the soil reaction, the pH, that is the acidity or alkalinity of the soil. Fourth, they have great buffer action, that property of the soil which resists change in the pH reading of the soil solution. Fifth, they have great water holding capacity.

In part then, this is the story of the soil colloid. There are many good books on this all important subject in the library. The following additional literature is informative. U. S. D. A. Tech. Bull., the effect of the different colloidal soil materials on the effect of superphosphate 5c. University of Ariz. Tech. Bull. 31, organic compounds associated with base exchange reactions of the soil. U. S. D. A. Tech Bull. 377, character and behavior of soil colloids. General Chemistry, by Richardson, 1927. General Chemistry, by McPherson and Henderson, 1933. The Nature and Properties of Soil, by Lyon and Buckman, MacMillan, \$4.00. Text-book of Plant Physiology, by Maximov, 1930, \$4.00, by McGraw Hill Co. Plant Physiology, by Meyer and Anderson, Van Nostrand Co., \$4.50. This last named book is especially good. It is new and contains much information, but of rather technical nature.

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CAMELIAS

By VIRGINIA CALLOWAY, La Jolla, Calif.

• Mr. Robert Casamajor, President of the Horticultural Society of Southern California, and in charge of Horticultural Research in the Camellia Society of Southern California, spoke on the history and culture of camellias. Very unusual slides contrasting camellias of one hundred years ago with camellias of today, were shown to the members of the Eva Kenworthy Gray Branch at the December meeting.

A few high points of Mr. Casamajor's speech are as follows:

1. HISTORY

Camellias are one of the oldest and finest of garden plants. There are around seventy-two species, but only seven or eight are under cultivation. Camellias were first cultivated in Europe in 1739, and introduced into the United States about 1797. They became very popular however, about 1845. Then after 15 or 20 years of popularity, they were more or less given up, and at that time many varieties were lost.

CULTURE

Camellias can be grown under various conditions. They will thrive either in the sun or in the shade. In Southern California it is recommended to grow them under lath or tall trees. They will do well in containers (and produce more flowers), or they will grow successfully in the ground, providing they are kept away from competing tree and shrub roots. Under all growing conditions they *must have excellent drainage.*

In planting them the roots should be kept near the surface, with the root crown high. Due to this, they must not be cultivated because you might damage the roots. Camellias require an acid soil, and if grown in containers the soil mixture should be 75% coarse leaf mold to 25% top soil. A liquid fertilizer is recommended for the plants in containers and a powder form to be used for those grown in the ground. Mr. Casamajor gave two combinations of fertilizer to be used. Before buds appear, use a mixture of ten parts nitrogen, ten parts phosphate, and three parts potash. After buds are set, change the mixture to three parts nitrogen, thirteen parts phosphate and six parts potash. Shaping camellias is done by pinching back right after the blooming period.

PROPAGATION

- a. By cuttings in sand, kept in a warm green house.
- b. Grafting. The grafting on older plants

San Gabriel Valley Branch

The following officers have been elected to serve the San Gabriel Valley Branch for 1946: President, G. L. Johnson, 1320 Ramona Road, Arcadia, Calif.

Vice President, H. M. Washburn, 935 Topeka Street, Pasadena 6, Calif.

Secretary, Mrs. Myrtle Jones, 132 May Ave., Monrovia, Calif.

Treasurer, Mrs. Josephine Hotz, 123 East Lime, Monrovia, Calif.

Representative Director, C. B. Lansdown, 535 Jackson Street, Pasadena, Calif.

Director, George V. Stegner, 77 Woodland Lane, Arcadia, Calif.

Junior Past President, S. M. Heffner.

Inglewood Branch Officers

President, C. D. Tanner, 6056 3rd Ave., Los Angeles, Calif.

Vice-President, Murray Minehart, 3618 W. 59th St., Los Angeles, Calif.

Secretary, Mrs. Mildred Dressel, 432 W. Fairview, Inglewood, Calif.

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National Representative, Lou Schirmer, 8611 5th Ave., Inglewood.

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(Continued from Page 28)

2 pints rich compost, 2 pints sand, 1 pint peat, a sprinkling of charcoal and Vigoro.

In the Robin of a Central California Director, one kind of begonia is chosen for the subject of each round, the members in each state telling their joys and sorrows in growing this variety. This gives a good idea of the many climatic changes this begonia endures, and shows what a hardy and adaptable plant the begonia is. A Washington member sterilizes her soil for 3 hours in a pressure cooker before planting seeds or cuttings. Colorado reports that she cannot grow Rexes in Summer, but in Winter they grow beautifully because she sprays them daily. Summer spraying is not beneficial. Can the altitude account for this contradiction? The most difficult begonias for her to grow are luxurians and Bertha von lothringen. She has tried pure leaf mold on Rexes, but has better plants in heavier soil. The fibrous do not like pure leaf mold at all. I can corroborate this, having recently had a painful experience of this sort. Never again!

Apparently, all is not bliss in growing begonias in California, as we Easterners have thought, for one of the California Directors lives in the foothills of the Sierra Nevada Mts., at 1,700 feet altitude, and her conditions would certainly daunt an Eastern begonian. The summers are hot and dry, the winters very wet, the average rainfall being 75 inches. The temperature ranges from 20° in the winter to 110° in summer.

Fortunately the nights are cool, making it possible to endure the heat of the day. These plants are grown in a greenhouse the year around. In summer, the glass is heavily shaded with green kalsomine, which is removed in late fall. The benches, paths and plants are well sprayed early on hot mornings and this is sufficient for 24 hours. If it is very hot, the glass is sprayed outside as well, keeping the temperature down to a mere 105°, and the plants thrive. Did I not say, begonias are tough? The favorite soil mixture here is three parts leaf mold and one part each of compost, soil and sand.

From these torrid conditions we turn to Minnesota, where on Nov. 8 a member writes "Snow and wind are howling around the house and the temperature will drop to 10° tonight. A little early for this, but we often have 25° below in winter and have had 6 weeks of sub-zero weather. I have a glassed east sun porch and last winter it got as low in it as 39° at night, but when the sun was out next day it often was 96°, and the begonias flourished!" Her favorite soil

mixture is garden soil, well rotted sawdust and oak leaf mold.

In the Fibrous Advanced No. 1 Robin, the problems are soil and water. A California member uses Rosecroft's alum solution. Maine, Massachusetts and New York members use rain water, as their water supply is chlorinated. The New York Director uses three quarters sandy leaf mold, from soft maples, mixed with one quarter good garden soil, which is most satisfactory. For fibrous, one half each of sandy leaf mold and garden soil is used. For semperflorens, she uses straight sandy leaf mold. Also regular garden soil, with equally good results. Her plants are grown in the windows the year around, for it is too windy to put them outdoors, although she finds that the semperflorens and Thurstoni will endure porch conditions.

The Massachusetts Director of Fibrous Beginners Robin also has a definite subject for discussion each round. On their second round it was soil and containers. Many of her members like to grow the fibrous, especially the small leaved kinds, in tin cans with many nail holes in the bottom and lower sides. Plain woods soil is used in these containers. Some root cuttings in colored bottles with rain water and a bit of charcoal. Another uses the double pot method,—a small inner clay pot, water filled, set in a larger pot of sand. The cuttings are set in the sand, close to the water filled pot. An Iowa member has good success rooting cuttings in a shallow pan of very old sawdust.

Here again is food for thought on this sawdust question. Could not these members get a local chemist to analyze the sawdust and report on his findings? A member living in the Catskill Mountains, in New York, uses old powder from hemlock stumps which were stripped of their bark for tanning 50 years ago. She mixes this powder with soil and also uses it for a mulch. The Director of this Robin suggests that the New York Botanical Gardens order of description be followed in describing begonias for identification: growth of plant, kind of roots, shape of leaves (toothed, lobed, etc.), hairy or smooth, color, color of veins, color of flowers, upright or drooping, description of ovaries and their color, persistence of bracts, color of stems, etc.

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Meeting Dates and Speakers

It would be much appreciated if the Secretaries of the Branches would send meeting data to reach the Editor **NOT LATER THAN THE THIRTEENTH OF THE MONTH.**

The next meeting of the American Begonia Society Board will take place in the Los Angeles Public Library, Children's Library Room, Grand Street Entrance, Monday February 25th, at 7:30 p.m.

THEODOSIA BURR SHEPHERD BRANCH

Tuesday, February 5th, 7:30 p.m.

American Legion Hall
North Carolina St., Ventura, Calif.
Mrs. Wm. Smith, Sec.-Treas.
Ventura, Calif.

BELLFLOWER BRANCH

Tuesday, February 5th, 6 p.m.

Masonic Hall Supper Meeting.
Mrs. Ardel Radle, Secretary
920 Flower St., Bellflower, Calif.

SAN FRANCISCO BRANCH

Wednesday, February 6th, 7:45 p.m.

American Legion Hall, 1641 Taraval St., San Francisco, Calif.
Secretary, Mrs. Walter Ashe, 1855 - 33rd Ave., San Francisco, Calif.

ORANGE COUNTY BRANCH

Thursday, February 7th.

College Hall, Santa Ana J. C. 917 N. Maine St. Santa Ana, Calif.
Mrs. K. D. Burdick, Sec.-Treas., Rt. 3, Box 355, Santa Ana, Calif.

CALIFORNIA HEIGHTS BRANCH

Friday, February 8th, 7:30 p.m.

Home of Mr. and Mrs. Jos. A. Smith, 250 E. Howe St., Long Beach, Calif.
Mrs. Merle H. Penrose, Sec.-Treas.
4142 Walnut Ave., Long Beach 7, Calif.

LA MESA BRANCH

Monday, February 11th, 8 p.m.

La Mesa Grammar School
La Mesa, San Diego Co., Calif.,
Sec.-Treas.: Mrs. Joseph Christofferson
4491 Culbertson St., La Mesa, Calif.

NORTH LONG BEACH BRANCH

Monday, February 11th, 7:30 p.m.

42 East Market St., North Long Beach, Calif.
Mrs. Mary Coon, Secretary,
5511 Olive Ave., Long Beach, Calif.

PASADENA BRANCH

Tuesday, February 12th, 7:30 p.m.

Casita del Arroyo
Lester F. Harrell, Sec.-Treas.
668 Bellefontaine St., Pasadena, Calif.

RIVERSIDE BRANCH

Tuesday, February 12th, 8 p.m.

Mrs. Helen Hansen, Sec.-Treas.
Riverside, Calif.

INGLEWOOD BRANCH

Thursday, February 14th, 8 p.m.

Women's Club of Inglewood,
325 No. Hillcrest, Inglewood, Calif.
Mrs. Mildred Dressel, Secretary
432 W. Fairview, Inglewood, Calif.
Speaker: Herbert Dyckman

HOLLYWOOD BRANCH

Thursday, February 14th, 6:30 p.m.

Birthday Dinner.
Plummer Park, 7377 Santa Monica Blvd.,
Mrs. Roslyn Duval, Secretary
843 N. Sierra Bonita, Los Angeles, Calif.

SANTA BARBARA BRANCH

Thursday, February 14th, 2-4 p.m.

Neighborhood House, 800 Santa Barbara St., Santa Barbara, Calif.
Mrs. Stanley Pateman, Sec.-Treas.
P. O. Box 17, Goleta, Calif.

MARGARET GRUENBAUM BRANCH

Mrs. W. E. Jones, Sec., Willow Grove, Pa.

EVA KENWORTHY GRAY BRANCH

Monday, February 18th

Community House
Tillie Genter, Sec.-Treas.
7356 Eads St., La Jolla, Calif.

LONG BEACH PARENT CHAPTER

Tuesday, February 12th, 7:30 p.m.

St. Mathews School, Second Floor, 7th & Temple
Mary Hotaling, Sec.-Treas.
324A Temple Ave., Long Beach 4, Calif.

PHIOBEGONIA CLUB BRANCH

Irregular Meetings

May T. Drew, Pres.
Box 331, Narbeth, Pa.

SAN GABRIEL VALLEY BRANCH

Friday, February 22nd, 8:00 p.m.

American Legion Hall
720 N. First Ave., Arcadia, Calif.
Mrs. Myrtle Jones, Secretary
132 May Ave., Monrovia, Calif.

NEW ENGLAND BRANCH

W. C. Atherton, Treasurer,
60 Chestnut St., Wakefield, Mass.

SAN DIEGO BRANCH

Monday, February 25th

Hard of Hearing Hall
3843 Herbert Ave., San Diego, Calif.
Mrs. A. P. Carlton, Sec.-Treas.
624 Arroyo Dr., San Diego 1, Calif.

WHITTIER BRANCH

Tuesday, February 26th, 7:30 p.m.

Jonathan Bailey School, Room 19
Comstock Ave. & Hadley Street, Whittier, Calif.
Madeleine Hall, Secretary,
509 Friends Ave., Whittier, Calif.

EAST BAY BRANCH

Tuesday, February 26th, 8 p.m.

Council Chambers, Berkeley City Hall
Dick G. Goodnow, Secretary,
2519 Milvia St., Berkeley 14, Calif.

GLENDALE BRANCH

Tuesday, February 26th, 8 p.m.

329 No. Brand Blvd., Glendale, Calif.
Mrs. Helen Grigsby, Secretary
958 E. Mountain, Glendale 7, Calif.

ALFRED D. ROBINSON BRANCH

Wednesday, February 27th, 7:30 p.m.

Hall, Point Loma Community Church
Udal Street at Poinsettia Dr., San Diego, Calif.
Mrs. Merrel H. Taylor, Secretary.
2838 Chatsworth Blvd., San Diego, Calif.

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