The following statements given by the members of the Discussion Panel in response to questions from the audience have been freely edited by Professor H. K. Riley, Southwestern Louisiana Institute, who was Leader of the Panel.

Members of the Panel were: Judge Arthur W. Solomon, Savannah, Georgia, Chairman, Mr. T. K. McKnight, Baton Rouge, Louisiana, Vice-Chairman, Mr. William T. Wood, Macon, Georgia, Mr. R. J. Wilmot, Gainesville, Florida, Dr. D. C. Strother, Fort Valley, Georgia, Mrs. William T. Wood, Macon, Georgia, Dr. A. G. Plakidas, Baton Rouge, Louisiana, Mr. R. H. Hanchey, Baton Rouge, Louisiana, Mr. W. D. Kimbrough, Baton Rouge, Louisiana, Mr. S. J. McCrory, Baton Rouge, Louisiana, Mrs. William T. Wood, Macon, Georgia, Dr. A. G. Plakidas, Baton Rouge, Louisiana, Mr. S. J. McCrory, Baton Rouge, Louisiana, Miss Camilla Bradley, New Orleans, Louisiana, Mr. F. S. Gooch, Lafayette, Louisiana, Dr. Lewis T. Graham, Lafayette, Louisiana, Mr. C. C. Cain, Lafayette, Louisiana.

Q. What will cause bud drop?
A. KIMBROUGH—Well, I am not sure that I can give a definite answer on that. There might be a number of things that would cause it. You have dry weather; not enough moisture may cause buds to drop off the plant. Then, of course, if you don't have a healthy plant, but that would come under the pathologist's domain. I am not sure that I can give too much on that.

MISS BRADLEY—Poor drainage seems to be one of the contributors of bud drop.

WILMOT—Some change in temperature also affects bud drop. Cold, or even warm weather will be a contributing factor.

PLAKIDAS—There are certain varieties that have the tendency for the buds not to open properly and those buds will drop. Plant such varieties in partial shade to prevent bud drop.

Q. Why will a Camellia fail to set buds?
A. KIMBROUGH—Sometimes the setting of buds depends upon the vigor of the plant. If you have a very vigorous plant you might have early setting of buds. Normally all plants will tend to get back to normal growth and should set buds unless there is some peculiar condition. With little sun or too dense shade you might not have proper bud set. Some of them set early and some of them when the plants are older. You have those growing too much, or they might not grow enough. If the plant is in very poor condition it might not—although some do tend to over-set—if they are in such poor condition they can't set at all.
These proceedings of the Camellia Clinic, which have been transcribed from a tape recording, have been freely edited in order to make them more suited to the written word. It is hoped that the editing has taken nothing away from the splendid job done by Mayor Homer Fritchie, panel leader, and his able panel consisting of: Dr. W. D. Kimbrough, Baton Rouge, Professor C. C. Dain, Lafayette, Professor F. S. Gooch, Lafayette, Professor Lewis T. Graham, Lafayette, Mr. Earl Vallot, Youngsville, and Mr. Carl Gaddis, Lafayette.

Q. I understand that by cutting a blossom with the stem, next year's bloom is sacrificed. Is this true?

A. MR. VALLOT: I don't think that it would hurt in anyway. It probably would do it some good. By cutting a stem you force more shoots out and thereby get a better bush. I don't think that you would have any damage from cutting blooms.

DR. KIMBROUGH: I agree very well with Mr. Vallot. If a plant isn't too small, or even a small plant - if you want to make it branch it will do that, and I don't see where it will do any harm as far as next year's growth is concerned, if you get normal growth and if your plant is in good condition.

Q. MAYOR FRITCHIE: If I understand correctly, Dr. Kimbrough, if I cut a bloom off a tree, and that plant grows properly, next year I will have some flowers on that same stem and if that stem from which the flower was cut has two or three new shoots, then I might have two or three flowers.

A. DR. KIMBROUGH: Of course, you realize that there is a growing point connected with the bloom bud and many people, especially with small plants, just twist the flower off and float it in water to keep from destroying that main bud which is usually a little more vigorous than last year's bud would be and it would make a little more rapid growth a little sooner.

Q. Suppose you cut all the blooms off a plant and your plant dies - I cut about 600 blooms off at one time and it died, did this kill it?

Q. DR. KIMBROUGH: Did you cut all the leaves off too?

A. Yes, a good part of the leaves.

DR. KIMBROUGH: When you take a lot of the leaves off, especially with small plants, you are taking the part off that makes the food for plant growth; so you can take off too many leaves, but if you
By popular demand I am bringing out this Loose Leaf Binder. Handsome Imitation Leather with Embossed title, size 8 x 12, which will accommodate 125 Color Plates.

The plates are actual size, showing in most instances a full blown flower and bud, with an abundance of foliage.

The plates are large enough for framing and will be available in sets of 37 at $5.00 per set. In broken sets the price will be 25c per plate.

Future new plates will be offered in sets of 8 at $2.00 per set. These will be available from time to time and can be added to the Loose Leaf Binder, enabling all to acquire a complete set of all color plates as they are produced.

35 Plates in this set of 37 are new varieties not shown in the book "Camellias." Two are improved plates of two shown in "Camellias."

Shortages of copper for plates for the engravers and of paper for printing brought about by the war have made it impossible to bring out more new plates at this time.

I wish to take this opportunity to thank each of you who has purchased my first book "Camellias," which has made possible the production of this Loose Leaf Ensemble. Your continued support of this work will assure you of a steady production of color photography of all known Camellias.
PRINCE EUGENE NAPOLEON

Syn. (Pope Pious IX, Mrs. Harry Davis, Carlotti Grissi, Madame Le Bois, Ladiners Red, Imbracata Rubra Plena.)

This much named Camellia is common throughout America. Almost every Nursery has its own name for it. In Augusta, Ga., it is sold as Imbracata Rubra Plena. In one part of Mobile County, Ala., as Prince Eugene Napoleon, in another part of the same county as Ladiners Red, a third nursery in the same county sells it as Pope Pious IX. On the west coast it is Madame Le Bois, etc.

A vigorous growing hardy Camellia flowering profusely from early January through March. In some localities each petal has a white stripe running horizontal with the petals. It is not a variegation but rather a defect in the substance of the petals. Under glass it is considered one of the most satisfactory varieties for the cut flower markets.

Growth is vigorous upright conical compact. Foliage medium green serrated. This variety will stand much sun without injury to flower or plant.
Prince Eugene Napoleon

Sample illustration from Loose Leaf Binder Camellias by G. G. Gerbing, 1945
The many articles of a scientific nature in the 1951 Yearbook reflect the interest of camellia growers in accurate information on the culture of the Camellia. Although the factors concerned in the growth of the Camellia are not radically different from the factors affecting the growth of other broadleaf evergreens, some of the basic expressions of growth may be slightly different with the Camellia. In this report I shall discuss some of the experimental work that has come out recently that may be applied to the culture of Camellias.

The recent disastrous results of cold damage to Camellias brings to the fore the question of increasing the cold resistance of plants. It has been noted in peaches that a hardy understock increases the winter hardiness of tender scions. It is quite possible, therefore, that understock of hardy varieties may be combined with other practices to increase the hardiness of tender varieties of Camellias. It has also been reported that buds of peaches and tung high in nitrogen and potash were more resistant to cold than buds deficient in these two elements. In the case of nitrogen, the fertilizer was applied so late in the growing season that new growth was not produced but early enough for the plant to absorb the nitrogen and increasing the density of cell sap and thereby increase cold resistance. Work with Camellias as well as with other plants has shown that healthy plants growing in a well-drained soil, protected from winds and at least partially shaded were more resistant to cold than plants growing under conditions lacking in any one of these factors. The well-drained soil promotes healthy root growth and increases the absorption of water during cold periods. Protection from winds prevents the loss of water, particularly during a time when the soil or the plant are frozen. Plants protected from winds freeze more slowly and, therefore, most of the ice crystals form between the cell walls rather than within the cells and thus usually cause less damage. Plants growing in the shade probably freeze at approximately the same rate as plants growing in the sun but thaw more slowly. The slow thawing prevents the death of cells from loss of water while the other tissues are still frozen and permits the absorption of water between the thawing of the ice crystals.

According to Batson ("51 Yearbook), there is no correlation between the rapidity of growth or type of growth and winter hardiness for growth maturing before cold weather. Funchess ("51 Yearbook) reports less damage on healthy dormant plants growing in the shade than unhealthy plants or plants growing in the sun. Liners and young grafts were injured at 22° but older plants withstood temperatures down to 5°.

Camellia fertilization has been recently investigated by Orr and Furuta of the Alabama Agricultural Experiment Station. These workers found nitrogen to be the most critical fertilizer element and no advantage of the ammonia form of nitrogen over that of the urea and nitrate forms of nitrogen. A deficiency of nitrogen limited bud initiation. Growth was reduced by 1.5 pounds or more of ammonium sulfate per 100 square feet. These workers reported that high calcium, low magnesium and low potash increased vegetative growth but 1.5 pounds or more of superphosphate per 100 square feet reduced vegetative growth. They secured the most desirable balance of vegetative and flowering growth from the use of 4.5 pounds of
6-8-8 per 100 square feet applied in four applications. The first application was made before growth started in the spring, the second at the end of the period of spring growth, the third in late June or early July and the fourth in late fall.

The following materials and rates of application are recommended by various workers to correct specific mineral deficiencies in Camellias:

1. to supply calcium without changing the acidity of the soil, gypsum at a rate of 5 pounds per 100 square feet; 2. To lower the acidity of the soil, sulphur - 1/8 to 1 pound of superfine or wettable sulphur per 100 square feet. When more than one application is required, allow 4 to 6 weeks between applications; 3. to supply magnesium, use a water solution of 3 ounces of magnesium sulfate (Epsom salts) per 5 gallons of water; 4. to correct iron chlorosis, use a foliage spray of 1 ounce of ferrous sulfate (copperas) per 4 gallons of water or a soil application of 4 ounces of ferrous sulfate to 5 gallons of water; 5. to supply boron, apply a water solution of 10 drops of 5 percent boric acid per gallon of water; 6. to supply nitrogen by foliar application, use Nu-green as a spray at the rate of 1/2 pound of Nu-green per 10 gallons of water. The foliar application of nitrogen is useful in correcting yellow foliage due to lack-of-nitrogen deficiency. This method is also useful in applying nitrogen late in the season under controlled conditions to prevent late growth of the plant that may result in winter injury.

The work of the author (151 Yearbook) on effect of length of day and light intensity on the growth and flowering of Camellias has shown that:

1. flower bud initiation occurs only during a long day; 2. flower buds were initiated within the first 28 days after the buds began growth; and 3. the buds could be distinguished as flower buds within 60 days after initiation. The long day treatment increases the percentage of flower buds and the percentage of normal flowers. The long day and low light intensity treatments increased twig growth. It would appear from this experiment that: 1. the length of day did not affect the time of bloom; 2. that flower bud formation and development were approximately equal under both low and high light intensity; and 3. that light intensity has no effect on the time of bloom. Other work with the Camellia (Bonner) has shown that high temperature favors flower bud initiation and a low temperature (55°F) hastens flower bud development (flowering). The same worker reported that high temperature reduced the quality and increased the fading of blooms.

A practical application can be made of the length of day and light intensity work. The long day treatment, that is, supplementing the normal length day with electric lights to provide a 13-hour day, can be used to increase flower bud initiation on old plants or to initiate flower buds on young seedling stock so that the seedlings can be observed and selected much sooner than if grown under normal conditions. The long day treatment can be combined with shading to increase the vegetative growth of seedling stock. These cultural practices can be used to shorten the time from seed to bloom and thus reduce the space required in carrying on breeding work. Commercial growers can use the same treatment to increase the vegetative growth of large plants after a period of heavy flowering or when the plants have been severely defoliated by diseases or some cultural practice.

Work on the propagation of the Camellia has shown that the response of cuttings to treatment with hormone powders or solution varies with the age of the cuttings, with the locality in which the stock plants were grown and with the management of the propagating structure. In general hormone treatment has
shown a slight increase in the number of roots and a greater increase in root weight. In other words, hormone treatment does not necessarily increase the number of roots but may increase the length of the roots and reduce rooting time as compared to untreated cuttings. Hormone treatment is not a substitute for proper selection of wood or management of the cuttings but an aid in reducing cutting loss through a reduction of the time when cuttings must be given close care.

Certain other practices have been shown to increase the rooting of cuttings.

Rooting increases within an increase in the number of leaves per cutting, provided the leaves are prevented from wilting. That is, a cutting which is kept turgid with four full leaves on the cutting will root approximately four times as well as the cutting with one leaf. However, a cutting with one leaf that is kept turgid in a healthy condition, will root more satisfactorily than a cutting with more leaves that is allowed to wilt. The depth of sticking the cutting also influences the amount of rooting. Cuttings stuck deeply do not root as well as cuttings stuck only deep enough to support the cutting or approximately 1/2 to 3/4 inches deep. The type of media seems to have very little influence on the rooting of cuttings provided it is acid or slightly acid in reaction, well-aerated and has the ability to hold moisture. Sand, sand and peat, sand and vermiculite, and vermiculite have all been used successfully in propagating Camellias. It is important to remember that a mixture containing vermiculite should not be packed after sticking the cuttings as is done with other media.

Work in grafting Camellias at the Mississippi Agricultural Experiment Station (Batson) has shown very little difference: 1. in the "take" of side and cleft grafts; 2. in the "take" of grafts on potted understock and bare-root understock; or 3. in the "take" of open bench and closed cased grafts. The report indicates that, at least with pencil-sized grafts on sasanqua understock, the bare-root cleft graft handled in an open greenhouse bench units as well as grafts handled in the usual manner. The roots and graft of the above stock were covered with moist peat. Since this type of graft can be handled more economically than other types of graft it can be substituted for cuttings in the propagation of the less expensive difficult-to-root varieties. The advantage of the more vigorous sasanqua root system may also result in better growth of slow-growing varieties.
COLD RESISTANCE OF CAMELLIAS

Group A - Buds, Blooms and Wood Resistant

Flame
Governor Mouton
Semi-double Blush

Group B - Buds and Blooms Resistant

Brown's Red
Kimberly
Tricolor
Vedrine

Group C - Wood Resistant

Chandler Elegans
H. A. Downing
Imura
K. Sawada
Lady Clair
Lady Vansittart
Magnoliaeflora
Margaret Higdon

Group D - Least Resistant Buds & Blooms

Aspasia (Emp. of R.)
C. M. Hovey (Col. Firey, Wm. S. Haste
Candidissima
Catherine Cathcart
Duncan Bell (Mena Ladnier)
Gigantea
Methotiana
Purity
Rosa Superba

Group E - Least Resistant Wood

Colletti
Nobilissima
Pink Ball
Professor Sargent

Group F - Least Resistant Buds, Blooms and Wood

Alba Plena
Lady Hume's Blush
Victory White

1/ Combination of rating by Batson (2) and Funchess (6).

REFERENCES